



RESEARCH ARTICLES

Issue Networks, Information, and Interest Group Alliances: The Case of Wisconsin Welfare Politics, 1993–99

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ABSTRACT

Interest group scholars have long emphasized the importance of group alliances in the policymaking process. But little is known about how groups choose specific alliance partners; that is, who works with whom? Social embeddedness theory suggests that the social location of groups in issue networks affects the information available to them about potential partners and the desirability of particular alliances. To test this hypothesis, I use data from interviews with representatives of 57 interest groups and 46 other significant political actors involved in Wisconsin's 1993–99 welfare policy debate to model alliance formation with two-stage conditional maximum likelihood regression (2SCML). I find substantial support for my social embeddedness hypotheses that alliance formation is encouraged by previous network interaction, contact with mutual third parties, and having a central position in a network. In short, the placement of groups in networks serves to facilitate alliances among some pairs of groups and to cut off potential connections among others.

THE LAST QUARTER CENTURY has witnessed an explosion of interest group formation and participation in policymaking at the state and national levels in the United States (Baumgartner and Jones 1993; Berry 1999; Gray and Lowery 1996). As interest group communities have become larger and more complex, individual groups may find themselves to be less influential than in the past (Salisbury 1990). This crowding of interest communities has led groups to devise new strategies to gain policymaking influence. Forming alliances with other groups is one such strategy. Groups that once tended to operate independently now find that a scarcity of resources and increased competition leads them to seek out alliances (Baumgartner and Jones 1993; Gray and Lowery 1998). Alliances allow groups to demonstrate better the

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strength of support for their policy positions to policymakers, to pool resources, to share information, to calibrate carefully the degree of their involvement on a range of issues, and even to hide their involvement on some issues from selected audiences (Hula 1999).

Scholarship on interest group alliances has focused on the knowledge groups have of potential allies and adversaries in their environment (Heinz et al. 1993), the extent to which alliances are a response to scarce resources (Gray and Lowery 1998), the roles that groups choose to play in alliances (Hula 1999), and the importance of a group's reputation in determining its behavior in an alliance (Hojnacki 1998). Hojnacki (1997) modeled the alliance decision as a cost-benefit calculation in which groups weigh the benefits of alliance formation (e.g., increased efficacy, conservation of scarce resources) against its costs (e.g., reduction of autonomy, loss of distinct identity). But while scholars have generated a substantial body of knowledge about alliances, they have yet to shed much light on how groups decide to form specific alliances.

Given the increased crowding of interest group environments and the prevalence of alliances, the important question is no longer whether groups are likely to form alliances, but with whom they are likely to work and why. As Hula (1999, 6) opined, "[t]he next step in understanding coalition behavior is the development of a model that can predict which groups will work together, why they coalesce, what their alliances will look like, and when these alliances will arise." Such a model would recognize that when groups make alliance decisions, they do not choose to develop an alliance as an abstract strategy, but rather they make choices about specific alliance partners from the set of other groups in their interest community that are interested in a specific policy issue. A group's alliance decisions are conditioned on whether the set of potential partners is large or small and the extent to which those partners are also interested in allying with the group.

I model alliance formation as the product of interactions among dyads of groups in an issue network. A network is a mechanism through which groups exchange information about potential alliance partners, build trust, and establish the reputations that become the currency of alliance relationships. My research design identifies a series of related events surrounding a single episode of policy change, and I use these events to examine the processes through which groups form and dissolve alliances. My data are drawn from my interviews of interest groups' leaders and other political actors involved in the 1993–99 debate over welfare policy in Wisconsin. I measure the *embeddedness* of these interest groups, which is the extent to which individuals and institutions are intertwined in "ongoing social relations" (Granovet-

ter 1985, 482). I find that the social embeddedness of a group in the interest community significantly influences who it chooses as alliance partners. Connectedness in social networks helps to forge alliances, while the lack of social connections blinds groups to potentially profitable partnerships.

INFORMATION, EMBEDDEDNESS, AND ALLIANCE DECISIONS

The notion that issue networks are the institutional context within which public policy is made in the United States is now widely accepted (Gais, Peterson, and Walker 1984; Heclo 1978; Kingdon 1984; Thatcher 1998). Scholars have explored the construction of issue networks by examining the circumstances under which network ties form among interest groups (Browne 1990; Esterling 1999; Hojnacki 1997) and between groups and legislators (Hojnacki and Kimball 1998; Kollman 1997) and the conditions under which legislators prefer group ties to party ties (Hansen 1991). But while these studies have used networks as a metaphor, they have not applied rigorous network theories and methods in their analyses.

On the other hand, Laumann and Knoke (1987) and Heinz and his colleagues (1993) have focused explicitly on describing network patterns, comparing patterns across policy domains, and suggesting associations between networks and other variables. Fernandez and Gould (1994) used Laumann and Knoke's (1987) data to demonstrate that government agencies reap the advantages of brokerage in communication networks only when they maintain neutrality on policy issues, which allows them to be seen as honest brokers, rather than advocates. In a series of methodologically innovative articles, Carpenter, Esterling, and Lazer (1998, 2003, 2004) used the same data to examine contact-making in networks as a product of strategic interest group behavior. They showed that lobbyists are more likely to hear new information through weak network ties (Carpenter, Esterling, and Lazer 1998), but the dynamics of high-information-demand environments cause lobbyists to invest more time building strong ties than weak ones (Carpenter, Esterling, and Lazer 2003). Carpenter, Esterling, and Lazer (2004) explained that mutual third parties broker relationships between lobbyists, thus demonstrating the importance of the microstructures of networks in affecting interest group behavior.

Network analysis scholarship has the potential to inform answers to the causal questions raised by scholars of interest group alliances. In particular, the question of which groups work together can be thought of as a matter of why network structures change over time. I propose a theory in which issue

networks serve as the informational context in which decisions about alliances are made. Interest groups use the information they acquire through their interactions in issue networks to make decisions about alliances, which in turn reshape issue network structures. Thus, alliance formation is an endogenous process of forming and re-forming issue networks. This approach addresses the questions posed by political scientists about interest group alliances by using the theories and methods developed by sociologists for studying other social networks.

Alliances are partnerships formed by interest groups for the purpose of working together in the advocacy arena to achieve mutual objectives (Hojnacki 1997). Typically, alliances are not legal arrangements, but are negotiated informally among groups. They may be created for planning strategy, meeting jointly with legislative staff, funding political advertising, or developing research and intelligence. Alliances almost always involve the confidential exchange of information about upcoming political events. A particular alliance may focus on a single issue or event (such as blocking the passage of a particular bill) or a range of issues and common group interests. Thus, alliances may be ad hoc, short-term arrangements, or they may persist over time, depending on the mutual interests of the parties involved (Hula 1999).

When an interest group is faced with decisions about with which other groups it should propose an alliance, it must cope with a variety of information problems.¹ Given that groups have limited information about potential alliance partners, they must make decisions under conditions of uncertainty. This information is also asymmetric, since each group possesses private information about how it will act in an alliance situation while lacking information about how its potential partners will behave. Making decisions under these conditions is risky. Not only may potential alliance partners shirk in contributing resources to the alliance or withdraw from participation before the stated policy goal is reached, they may actually do concrete damage to a group's objectives.² For example, an alliance partner might leak sensitive information about strategy, engage in behavior or make statements that are embarrassing to its partners, or damage its partners' reputations because of its past actions.

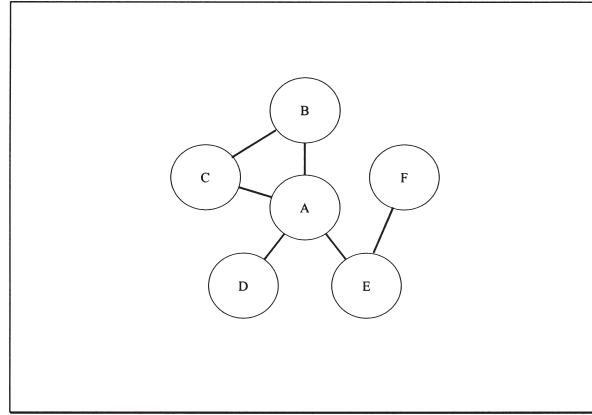
When interest groups are confronted with these informational asymmetries, how can they make beneficial alliance decisions? Social embeddedness theory stresses "the role of concrete personal relations and structure (or 'networks') of such relations in generating trust and discouraging malfeasance" (Granovetter 1985, 490). Embeddedness enhances informed decisionmaking through three distinct mechanisms: personal relationships, third-party observation, and network-wide visibility. First, the greater the density of over-

lapping ties among groups, the greater the likelihood that potential partners know one another personally. While potential partners may not have engaged previously in formal alliances, they may have private information about one another through contact in professional associations, community affairs, or personal relationships. These contacts cast a “shadow of the future” on interaction (Axelrod and Keohane 1985, 227). Actors know that because they have had contact in the past, future interaction is likely, thus affecting the honesty with which they interact currently. For example, in the hypothetical communication network depicted in Figure 1, actors B and C are more likely to form an alliance than are actors B and F, in part, because B and C have a history of communication, while B and F do not. Second, observation of other alliances in an interest community by third parties increases the likelihood that information about any opportunistic or other poor partnership behavior on the part of a group will damage its reputation in that community (Burt and Knez 1995). Because each group knows that it faces the potential loss of standing with observing third parties (who may refuse to engage in future exchange, fail to communicate valuable information, or disseminate negative gossip), third-party observation allows a group to gain confidence that the other can be trusted to cooperate well in an alliance. For example, in the network depicted in Figure 1, an alliance between actors C and D is more likely than an alliance between F and C because A would serve as a third-party observer between C and D but not between F and C. Third, in dense social structures, groups possess information about the nature of ties among other participants in the network, which facilitates the emergence of status and other signals that provide valuable, uncertainty-reducing information (Podolny 1993). Occupation of a central position in a network allows information about an actor to diffuse more widely than if the actor maintained a peripheral position. For example, because actor A occupies a central position in the network in Figure 1, information about A will diffuse rapidly in the network, making it a desirable alliance partner for all members of the network. On the other hand, actor F is less well known because it occupies a peripheral position in the network, making it a less desirable alliance partner for all members of the network.

Gulati and Gargiulo (1999) suggest a typology of the forms of social embeddedness that allows these mechanisms to be mapped into distinct hypotheses about interest group alliance formation:

- H1. **Relational embeddedness.** *As the amount of contact between members of a dyad increases, uncertainty about whether an alliance could be successfully prosecuted is reduced, thus increasing the likelihood that*

Figure 1. Hypothetical Communication Network



Note: Each circle represents a group. A line between two circles denotes a history of communication between the groups.

an alliance will form between them, ceteris paribus. Groups are more likely to develop new alliances with those groups with whom they have maintained alliances in the past, since they have less uncertainty about their alliance behavior.

- H2. **Structural embeddedness.** *Members of a dyad are more likely to form an alliance with one another when they are each tied with the same mutual third party, ceteris paribus.* Ties to mutual third parties increase groups' concerns about their alliance reputation because third-party observation increases the transparency of their behavior. The absence of such ties lessens the salience of reputational effects, thus reducing the commitment of both groups to a potential alliance.
- H3. **Positional embeddedness.** *The likelihood of a dyad forming an alliance increases as the joint centrality of the members of a dyad increases, ceteris paribus.* As the position of a group becomes more central in the network, more information is available about the group, making it a more desirable alliance partner.

Note that for each of these hypotheses, the process is independent of the fact that groups who have had an alliance in the past are more likely to share policy interests than those that have not. Collectively, these hypotheses imply that if we know something about the location of groups in the social structure of an issue network, then we can make predictions about the likelihood that an alliance will form between a given pair of groups, or *dyad*. Rather than sim-

ply asserting that information, reputation, and networks matter, these hypotheses suggest a process that can explain why who works with whom.

THE CASE OF WELFARE REFORM IN WISCONSIN, 1993–99

To test my hypotheses, this study explores the formation of interest group alliances in networks surrounding a single, well-defined instance of policy change: social welfare policy reform in Wisconsin, 1993–99. This makes a good test case because it is a significant, recent instance of policy change in which interest groups were actively involved. I collected network data in a manner similar to that of Laumann and Knoke (1987), while incorporating insights from Heinz and his colleagues (1993). I defined my sample events as several important events in Wisconsin's welfare reform process in this period. Next, I identified a set of political actors who participated in these events (of which interest groups representatives were a subset) based on citations in newspapers, appearances before legislative committees, lobbying activity, and the recommendations of a panel of experts. Finally, I conducted interviews with actors in the sample.

After Tommy Thompson (now Secretary of Health and Human Services in the Bush administration) ascended to its governorship in 1987, no state in the United States took welfare reform more seriously than Wisconsin. In his 1986 gubernatorial campaign, Thompson used popular uneasiness with the high welfare benefit levels paid in Wisconsin and rumors of the migration of welfare recipients from Chicago to Milwaukee to help propel himself to victory against incumbent Democrat Tony Earl (Peterson and Rom 1990). In the years following, welfare policy remained high on the state's policy agenda. During the late 1980s and early 1990s, Wisconsin made extensive use of demonstration projects authorized under Section 1115 of the Social Security Act to experiment with conservative reforms, such as providing recipients with additional incentives to work, marry, and attend school (Corbett 1995). In November 1993, the Wisconsin legislature took the bold step of enacting legislation to sunset the Aid to Families with Dependent Children (AFDC) program in the state by 1999, fully three years before the federal government made a similar move with the enactment of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA, which created the Temporary Assistance for Needy Families [TANF] program to replace AFDC). Wisconsin moved to "end welfare" (DeParle 1999b, A.1) in April 1996 by enacting Wisconsin Works (W-2), a radical, work-focused program that gave the administration of the welfare system to pri-

vate agencies and non-profit organizations in some places (most notably, in Milwaukee). The cumulative effect of these changes on the welfare client population is startling; between 1987 and 1999, Wisconsin's welfare rolls went from 100,000 families to 7,700, with most of the remaining cases being concentrated in Milwaukee (DeParle 1999a).

This period of welfare reform in Wisconsin can be thought of as being divided by three significant events. The first event was the set of waivers requested by Wisconsin between 1992 and 1996 and approved by the United States Department of Health and Human Services under Section 1115 of the Social Security Act. I treat Wisconsin's final four waivers as a single event because organizations seem to have responded to them as such. These waivers were a series of administrative experiments that collectively represented a coherent effort by the governor and his allies to reshape welfare policy, and as such, they were the first significant event in welfare reform in this period in Wisconsin. The first waiver, Work Not Welfare, was approved by the Department of Health and Human Services in November 1993 for demonstration at selected sites. The other waivers included the AFDC Benefit Cap Demonstration Project (June 1994), Pay for Performance (March 1996), and Self-Sufficiency First (March 1996), each authorized for statewide demonstration. The second significant event I identify was the enactment of W-2, Wisconsin Works, with Thompson's signature and 27 partial vetoes on April 25, 1996 (Thompson 1996).

The final significant event was the implementation of the W-2 program. This included decisions about the timing of the transition from AFDC, the selection of organizations authorized to provide services, and choices about sanctions to recipients who failed to comply with work rules. Some W-2 implementation decisions were still being made at the time this study was undertaken, so these data are truncated, with interviews having been conducted from October 1999 to January 2000. However, by this time, W-2 was well on its way to becoming a mature program, with all AFDC recipients having been transferred to the new program (or cut off of public aid) and rules to fix "glitches" discovered in the system having been refined (DeParle 1998, 1.1). Participants in the policy process saw the early implementation of W-2 as a critical opportunity to influence policy outcomes.

I used four methods to identify important political actors in this process of welfare reform in Wisconsin. First, I counted the mentions the actors received in newspaper articles on Wisconsin's welfare reform, AFDC, or W-2 in 1994, July 1995–April 1996, and 1998.³ Second, I counted the number of times an actor's representative(s) registered or appeared before a Wisconsin state legislative committee while it was addressing welfare policy from De-

ember 1993 to October 1999.⁴ Third, I used data on registered lobbyists collected by the Wisconsin Ethics Board, including an organization in the sample if it listed “welfare reform,” “child welfare,” “AFDC,” or “Wisconsin Works” under its “lobbying interest” (Wisconsin Ethics Board 1994, 1996, 1998, 1999) or if it lobbied the legislature on the W-2 bill, Assembly Bill 591 in the 1995–96 Session (Wisconsin Ethics Board 1995). A final method identified important political actors with a panel of experts on Wisconsin’s welfare policies and politics.

My interview instrument was adapted from the energy policy domain instrument used by Laumann and Knoke (1987, Appendix B). I conducted interviews with representatives of 57 of the interest groups identified as significant political actors in this policy network. I identified specific individuals to interview by looking at newspaper quotations, testimony before legislative committees, lobbying registration records, personal contacts with the offices of the organizations in the study, and referrals from other respondents in the study. Fifty-one other significant political actors were identified in this process (e.g., legislators, the governor, local governments, and policy entrepreneurs), of which 46 representatives were interviewed (five actors declined to be interviewed for this study).

MODELING ALLIANCE FORMATION

The purpose of the statistical model is to test my hypotheses of interest group alliance formation around changes in Wisconsin’s welfare policies from 1993 to 1999. The unit of analysis is a dyad of two interest groups from among the 57 significant political actors in this process. The dependent variable is a dummy variable denoting whether an alliance existed within an interest group dyad in period t . A dyad is coded as having an alliance if and only if both members of that dyad signified the existence of an alliance in their interviews. Two statistical models were estimated separately. Model 1 analyzed alliances that existed during the second event (passage of W-2), so $t = 1995-96$ and $t-1 = 1993-95$ in this model. Model 2 analyzed alliances that existed during the third event (implementation of W-2), so $t = 1996-99$ and $t-1 = 1995-96$ in this model. See Appendix A for a more detailed definition of each operational variable.

Variables are listed in Table 1 as they correspond to my hypotheses. I test the relational embeddedness hypothesis with variables denoting a previous alliance among members of the dyad and any previous contact among them in the communication network of significant political actors at $t-1$. I test the structural embeddedness hypothesis with a variable denoting contact of both

members of the dyad with common third parties in the communication network at $t-1$. I test the positional embeddedness hypothesis with a variable denoting the average centrality of the members of the dyad in the communication network at $t-1$. Combining the centrality of the two actors accounts for how the alliance is affected by the position of the dyad in the network. When both groups have high centrality, combined centrality is high; when both groups have low centrality, combined centrality is low; when the groups are unequally central, an intermediate condition of centrality exists. Each embeddedness variable is expected to have a positive effect on the likelihood that an alliance will form in the dyad.

Variables controlling for alternative explanations for alliance formation are listed in the second part of Table 1. Issue niche theory suggests that groups prefer not to form alliances with other groups when they can avoid it, because doing so tends to blur their distinct identities (Browne 1990). In particular, forming alliances with other groups in one's own issue niche may tend to make a group less distinct from the other advocates in that niche. While groups in a similar issue niche may be policy allies relative to groups on the other side of an issue, like-minded groups are also potential competitors for membership support and financial backing. Thus, to the extent that groups develop explicit alliances, and to the extent that they have a choice of partners, they prefer partners from different issue niches (Browne 1990). By minimizing niche overlap, groups signal that the alliance is only intended to advance short-term political interests and does not reflect a long-term change in the group's focus. I operationalize issue niche overlap as the percentage of common issue involvements in the issue niches of the two groups in a dyad. The greater the overlap, the lower should be the likelihood of alliance formation.

Several other alternative explanations are also considered. First, groups are more likely to work together when they share a common ideological perspective, so the likelihood of an alliance is expected to increase as ideological distance between them shrinks (Laumann and Knoke 1987). Second, a group that has greater capacity, as indicated by its lobbying budget, is more likely to work alone (since it has the resources to do so), while groups with minimal lobbying budgets may turn to alliances as a way of leveraging their limited resources.⁵ Third, more politicized groups (as indicated by a focus on advocacy, as opposed to direct provision of services to members), should be more prone to form alliances with other groups. Since organizations focused on advocacy are constantly working in the policymaking process, they are accustomed to the norms of advocacy (Berry and Aarons 2003), which include cooperation through alliances. Interest groups that are more focused

on service provision or public education and participate in the policymaking process more episodically likely are less familiar and comfortable with the alliance strategy. Fourth, alliance formation may be affected by a group's internal decisionmaking processes. Esterling (1999) has argued that groups that need to deliberate internally before taking public policy positions (as opposed to groups in which a central authority can make more unilateral policy decisions) often need to broaden the appeal of their positions to resolve intra-organizational conflict. The broadened perspective that can result from such deliberation may also serve groups well as they appeal to potential alliance partners, thus enhancing the probability of an alliance.

Fifth, the framing strategy adopted by a group may affect its ability to attract allies (Fleishman 1988). Groups that chose to frame opposition to Thompson administration reforms in terms of "justice for the poor" are predicted to have had broader appeal to alliance partners than groups that used alternative framings. Since the poor are rarely well organized enough to advocate effectively for themselves, appeals for justice for the poor usually come from other actors who have elected to advance the public interest, apart from their own parochial interests (such as calls for higher state government reimbursements for child care services made by an association of child care providers). By framing their arguments in terms of the public interest, groups create a broad appeal for their position, making it attractive to a wide variety of partners. When groups frame their appeals in terms of their private interests, they are only likely to garner support from others who hold those same private interests.

Finally, alliance formation is an example of collective action among groups, so it is important to control for the propensity of groups to participate in collective action (Olson 1971). Groups that supported the Thompson administration's position may have seen it as less necessary to form alliances with other groups, since the implicit alliance with the executive branch of the state government would have been thought sufficient to achieve their political objectives. Conversely, groups opposed to the Thompson administration's position may have believed that the formation of alliances was needed to demonstrate broader support for their position (Hojnacki 1997; Hula 1999). Achieving a policy victory in the previous period may have also reduced a group's willingness to engage in collective action, while suffering a policy loss in the previous period may have increased that willingness (Hansen 1985). Finally, groups with offices in the same city as one another may have lower collaboration costs than those dyads that have to coordinate their joint efforts across cities. Thus, the location of two groups in the same city increases the likelihood of their allying with one another.

Alliances themselves constitute a form of social network embedding. My model accounts for the propensity of alliances formed in earlier periods to persist into later periods, even under conditions such that the later alliance might not have formed in the absence of the earlier one. For example, if two groups formed an alliance to work together against the passage of W-2, they may have continued working together during its implementation stage even if one of the members of the dyad would not independently have chosen to work on implementation. I model this temporal dynamic of alliance formation by including a right-hand-side endogenous variable: the presence of an alliance in the dyad in period $t-1$.

To estimate the second-stage model required by this endogenous variable, instrumental variables are needed. Such instruments must be correlated with the endogenous variable but not causally related to the dependent variable, alliance formation. I use a different set of three instruments in the equation for each period, reflecting differences in the factors influencing the choice of alliance partners during the different stages of the policy process.

The first equation requires instruments that are hypothesized to correlate with alliance formation in 1993–95 but not to affect directly the choice of alliance partners in 1995–96. First, I chose two variables that indicate a special interest in welfare experiments (which were the focus of state policy in 1993–95), independent of welfare policy generally: prior alliance with the New Hope Project (which had a vested interest in welfare experimentation nationally) and prior alliance with the counties that sponsored pilot projects for Work Not Welfare (Fond Du Lac County and Pierce County). Another instrument in this equation is whether a group claimed that welfare policy was a “predominant concern” of the organization, which would predict early partner selection (during the waiver period), but would not discriminate among alliances during the W-2 enactment debate, which drew the interest of many actors who did not have a predominant concern in welfare policy.

The second equation requires instruments that are correlated with alliance formation in 1995–96, but that are not expected to affect directly the choice of alliances in 1996–99. Involvement in health issues should have affected the structure of alliances during the 1995–96 period, when the W-2 Health Plan was on the table, but it should not determine group involvement in 1996–99, when health issues emerged less regularly. The number of registered lobbyists a group had and a group’s location in Madison should also affect partnerships during the W-2 enactment debate (1995–96), because this event was focused almost entirely on legislation. However, access to the legislature would be a less important tactic in developing alliances during implementation, since the number of points of influence expanded to include

state agencies to a greater degree, the Milwaukee W-2 agencies, and more nongovernmental service providers.

Table 1 summarizes the hypothesized effect of each of the independent variables in my model on the propensity of two groups to form an alliance.

Table 1. Hypotheses for Interest Group Alliance Formation

Dependent Variable	Alliance with a dyad of interest groups in period t	
Hypothesis	Variable	Expectation
<i>Relational embeddedness</i>	Prior alliance on non-welfare issue	Positive
	Contact in the communication network at t-1	Positive
<i>Structural embeddedness</i>	Close communication with common third party at t-1	Positive
<i>Positional embeddedness</i>	Combined centrality in communication network at t-1	Positive
Alternative Explanations		
<i>Niche overlap</i>	Percentage of overlap in issue niches	Negative
<i>Group ideology</i>	Ideological distance between groups in the dyad	Negative
<i>Group capacity</i>	Lobbying budget (more endowed group)	Negative
	Lobbying budget (less endowed group)	Negative
<i>Group politicization</i>	Organizational focus on advocacy (both groups)	Positive
	Organizational focus on advocacy (one group)	Negative
<i>Group deliberation</i>	Centralization of decision process (more decentralized group)	Negative
	Centralization of decision process (more centralized group)	Negative
<i>Framing</i>	"Justice for the poor" framing (both groups)	Positive
	"Justice for the poor" framing (one group)	Positive
<i>Collective action</i>	Pro-Thompson administration (at least one group)	Negative
	Policy loss in period t-1 (both groups)	Positive
	Policy loss in period t-1 (one group)	Positive
	Office in the same city	Positive
Endogenous right-hand-side variable	Alliance within a dyad of interest groups in period t-1	Positive
<i>Instruments for 1995–96</i>	Prior alliance with the New Hope Project (both groups)	
	Prior alliance with the New Hope Project (one group)	
	Prior alliance with experimenting counties (both groups)	
	Prior alliance with experimenting counties (one group)	
	Welfare a predominant concern (both groups)	
<i>Instruments for 1996–99</i>	Welfare a predominant concern (one group)	
	Very involved in health issues (both groups)	
	Very involved in health issues (one group)	
	Number of registered lobbyists (both groups)	
	Number of registered lobbyists (one group)	
	Headquarters in Madison (both groups)	
	Headquarters in Madison (one group)	

DATA, ESTIMATION, AND EMPIRICAL RESULTS

I interviewed representatives of a wide range of interest groups in Wisconsin, some of which were centrally involved in the welfare debate and others of which were involved only episodically. Some of the leading liberal interest groups in the sample included the Wisconsin Council on Children and Families, the Hunger Task Force of Milwaukee, the Welfare Warriors, and the AFL-CIO, while leading conservative groups included Wisconsin Manufacturers and Commerce, the Wisconsin Restaurant Association, and the Independent Business Association of Wisconsin. The sample includes several groups that were only interested in specific aspects of welfare reform, such as education (e.g., Wisconsin Technical College District Boards Association), health care (e.g., Wisconsin Primary Health Care Association), entitlements for immigrants and disabled persons (e.g., Wisconsin Jewish Conference), and reproductive services (e.g., Wisconsin Right to Life). The sample also incorporates community advocacy organizations (e.g., the Poverty Network Initiative), national interest groups (e.g., the Children's Defense Fund), religious organizations (e.g., the Interfaith Conference of Greater Milwaukee), and quasi-academic advocacy groups (e.g., the Institute for Wisconsin's Future).

The policy positions taken during the W-2 enactment debate by the 57 interest groups in my sample are listed in Table 2. Groups are categorized according to whether they offered unconditional support for Thompson's plan, supported the plan but suggested some changes, opposed the plan, opposed the plan with a focus on a specific issue (that issue is noted in parentheses), or did not take a formal position. Note that just because a group

Table 2. Interest Group Positions on the Enactment of W-2

Fully Supported the Thompson Plan
Hudson Institute
Independent Business Association of Wisconsin
Wisconsin Restaurant Association
<hr/>
Supported the Thompson Plan with Minor Objections
Aurora Health Care, Inc.
Community Coordinated Child Care of Milwaukee
Lutheran Social Services of Wisconsin and Upper Michigan
Milwaukee Metropolitan Association of Commerce
New Hope Project
Waussa Area Hmong Mutual Association
Wisconsin Association of Independent Colleges and Universities
Wisconsin Counties Association
Wisconsin Manufacturers and Commerce
Wisconsin Technical College District Boards Association

Table 2. Cont.

<p>Opposed the Thompson Plan</p> <ul style="list-style-type: none"> 9 to 5, National Association of Working Women American Federation of State, County, and Municipal Employees Archdiocese of Milwaukee Center for Law and Social Policy Children's Defense Fund Community Advocates Esperanza Unida Hunger Task Force of Milwaukee Interfaith Conference of Greater Milwaukee League of Women Voters—Wisconsin Legal Action of Wisconsin, Inc. Lutheran Office for Public Policy in Wisconsin Milwaukee Area Technical College Milwaukee Public Schools National Association of Social Workers—Wisconsin Poverty Network Initiative Welfare Warriors Wisconsin Catholic Conference Wisconsin Coalition against Domestic Violence Wisconsin Council on Children and Families Wisconsin Early Childhood Association Wisconsin National Organization for Women Wisconsin Nutrition Project Wisconsin State AFL-CIO Wisconsin Women's Network
<hr/> <p>Opposed the Thompson Plan with a Focus on a Niche Issue</p> <ul style="list-style-type: none"> American Civil Liberties Union of Wisconsin (civil liberties) Catholic Health Association of Wisconsin (W-2 Health Plan) Center for Budget and Policy Priorities (new spending provisions) Center for Public Representation (W-2 Health Plan) Planned Parenthood Advocates of Wisconsin (W-2 Health Plan) United Council UW Student Governments (education/child care issues) Wisconsin Coalition of Independent Living Centers (disability issues) Wisconsin Council on Developmental Disabilities (disability issues) Wisconsin Education Association Council (education/child care issues) Wisconsin Primary Health Care Association (W-2 Health Plan)
<hr/> <p>Did Not Take a Formal Position</p> <ul style="list-style-type: none"> Children's Health System, Inc. Institute for Wisconsin's Future State Bar of Wisconsin University of Wisconsin System Wisconsin Association of Family and Children's Agencies Wisconsin Right to Life Wisconsin Urban Transit Association Work for Wisconsin Wisconsin Jewish Conference

Source: Author interviews with interest group representatives.

did not take a formal position on the enactment of W-2 does not mean it was not active in the W-2 policy debate. Some groups did not take a position because of intra-group disagreements but still found its advocates active in public dialogues. Other groups only monitored the enactment debate but then became leading voices during the implementation phase.

During the enactment period, alliances were a common strategy, with 89.4 percent of the groups forming at least one alliance with another group. The mean number of alliances for a group was 4.0, and the maximum number of alliances reported by one group was 11. Roughly 10.3 percent of dyads formed alliances during the waiver experiments (165 alliances). This increased to 14.2 percent of the dyads during enactment of W-2 (226 alliances), but then dropped slightly to 13.5 percent during policy implementation (216 alliances).⁶ Interorganizational communication was more widespread than were actual alliances, with some communication taking place in 32.3 percent of dyads during the waiver period, 43.8 percent of dyads during the enactment period, and 39.6 percent during W-2 implementation. While communication and alliance behavior dropped off after the enactment of W-2, they did not drop back to the levels in the pre-W-2 period.

More than half (54.4 percent) of the interest groups in the sample saw their organizational mission as being devoted primarily to advocacy, but only 22.8 percent considered welfare policy to be their predominant concern. Most of these groups were not supporters of the Thompson administration's policies, with only 31.6 percent claiming to be pro-Thompson administration and 80.7 percent believing that they had experienced a policy loss during the enactment of Wisconsin Works. The average group had 1.9 lobbyists and a lobbying budget of \$64,356 in 1999.

To estimate the regression models needed to test my hypotheses, I used Rivers and Vuong's (1988) two-stage conditional maximum likelihood (2SCML) procedure, which was popularized in political science through Alvarez's (1997) models of voter choice.⁷ Estimating the statistical model using some two-stage estimation process was required because $Alliance_{t-1}$ is an endogenous right-hand-side variable. The advantage of the 2SCML procedure is that, of the available maximum likelihood estimators for dichotomous dependent variable models, it is fairly easy to implement in most statistical packages. But more important, Rivers and Vuong (1988) have shown 2SCML estimates to be efficient both asymptotically (i.e., 2SCML reaches the Cramer-Rao lower bound) and in small samples (as demonstrated with Monte Carlo simulations).

The results of the 2SCML estimation presented in Table 3 indicate that my hypotheses of interest group alliance behavior receive substantial support

Table 3. Interest Group Alliance Formation on Wisconsin Welfare Reform—Two-Stage Conditional Maximum Likelihood Models

Variable	Model 1: 1995–96			Model 2: 1996–99		
	Beta	S.E.	t-value	Beta	S.E.	t-value
Network Variables						
Alliance in period t-1 (endogenous)	1.047	0.506	2.069	1.832	0.409	4.483
Prior alliance on non-welfare issue	0.773	0.123	6.281	0.318	0.129	2.468
Contact in the communication network at t-1	0.520	0.225	2.312	0.389	0.168	2.318
Close communication with common third party at t-1	0.745	0.136	5.466	-0.236	0.143	-1.644
Combined centrality in communication network at t-1	0.015	0.008	2.022	0.040	0.011	3.479
Control Variables						
Percentage of overlap in issue niches	0.481	0.740	0.651	0.406	0.670	0.606
Ideological distance between groups in the dyad	-0.040	0.019	-2.148	-0.027	0.017	-1.577
Lobbying budget (more endowed group)	-0.005	0.003	-1.562	-0.007	0.004	-1.760
Lobbying budget (less endowed group)	-0.004	0.017	-0.231	-0.020	0.019	-1.043
Organizational focus on advocacy (both groups)	0.063	0.150	0.418	0.252	0.154	1.641
Organizational focus on advocacy (one group)	-0.260	0.133	-1.946	0.066	0.133	0.496
Decision process (more decentralized group)	0.025	0.047	0.525	-0.103	0.045	-2.289
Decision process (more centralized group)	-0.095	0.050	-1.912	0.059	0.049	1.205
“Justice for the poor” framing (both groups)	0.989	0.390	2.532	-0.009	0.474	-0.018
“Justice for the poor” framing (one group)	0.055	0.211	0.261	0.065	0.181	0.359
Pro-Thompson administration (at least one group)	-0.043	0.126	-0.341	-0.017	0.122	-0.142
Policy loss in period t-1 (both groups)	0.512	0.167	3.062	0.278	0.171	1.624
Policy loss in period t-1 (one group)	0.174	0.151	1.151	0.212	0.151	1.408
Office in the same city	0.034	0.111	0.310	-0.093	0.105	-0.893
Constant	-2.408	0.320	-7.539	-2.125	0.312	-6.813
Log likelihood		-391.049			-412.758	
Correctly Predicted		88.53%			88.41%	
PRE		31.41%			15.28%	

Note: Dependent variable = 1 if an alliance exists in period t, 0 otherwise. Case = a dyad of interest groups. Number of interest groups = 57. Number of dyads = $(IGs^2 - IGs)/2 = 1596$.

in these data.⁸ Most important, all three embeddedness hypotheses are supported by the data. A history of a previous alliance in the dyad on non-welfare issues enters both equations with a statistically significant, positive effect, thus supporting the relational embeddedness hypothesis. A dyad with a history of an alliance on a non-welfare issue had a 12.3 percent increase in its probability of forming an alliance during W-2 enactment ($\beta = 0.773$) and a 4.8 percent increase during policy implementation ($\beta = 0.318$). Communication during the waiver period increased the probability of forming an alliance by 7.6 percent ($\beta = 0.520$), while communication during the enactment debate increased the chance of forming an alliance during policy implementation by 5.8 percent ($\beta = 0.389$). The positional embeddedness hypothesis similarly garners substantial support. As the centrality of a dyad increased by 10 points, the chances of alliance formation increased by 1.8 percent during the W-2 enactment debate ($\beta = 0.015$) and by 5.3 percent during policy implementation ($\beta = 0.040$).

The structural embeddedness hypothesis receives only mixed support. Third-party observation of a dyad increased the probability of alliance formation during enactment by 8.8 percent ($\beta = 0.745$), but it was not a statistically significant factor during implementation. It may be that since contacts during the waiver period were relatively sparse, relationships with third parties then were an important way for groups to resolve uncertainty about potential partners during enactment. However, once the network became fully mobilized and information about political actors diffused more widely, centrality of position became a more reliable gauge of partner desirability than contact with third parties.

The right-hand-side endogenous variable, $Alliance_{t-1}$, enters both equations with a strong positive effect. Taking all other variables at their means, the beta value of 1.047 in the first equation implies that an alliance established during the waiver period led to a 12.2 percent increase in the probability of continuing into the enactment period simply based on self-perpetuation, *ceteris paribus*. Similarly, the beta value of 1.832 in the second equation implies that alliances established during the debate over the enactment of W-2 led to a 24.6 percent increase in the chance of continuing into the policy implementation stage, *ceteris paribus*.

Several of the control variables' estimated coefficients were statistically significant in these models. Ideological distance entered the 1995–96 model with the expected negative sign (i.e., groups with similar ideological positions on poverty were more likely to work together), but this effect failed to attain statistical significance in the 1996–99 model. However, it may be that ideologically driven alliances formed during enactment (1995–96) exerted an

indirect effect during implementation through the lagged alliance variable. Alternatively, ideology may simply have been less important in alliance formation during implementation, for example, if interest groups were more concerned with finding practical ways to make policies work for their constituents than with continuing ideological wars.

These results offer only weak support for the hypothesis that groups with a focus on advocacy find each other to be especially desirable partners. Mixed, but suggestive, evidence is found for Esterling's (1999) claim that decentralized organizations are more desirable allies because their internal deliberations generate more inclusive positions; one of the two variables entered for this hypothesis has the expected negative sign in each period. If both members of a dyad relied on the "justice for the poor" frame, they were more likely to work together during the W-2 enactment debate. Having commonly experienced a policy loss during the waiver period also increased the chances of two groups working together during enactment. On the other hand, niche overlap had no statistically significant effect in either model, nor did it in any variation of the model that I estimated during robustness analysis.

DISCUSSION OF RESULTS

My results support the theory that the embeddedness of interest groups in networks of concrete personal relationships is an important contextual factor shaping the decisions of these groups to enter into political alliances. Confirmation of the relational embeddedness hypothesis leads to the unsurprising conclusion that groups tend to work with groups they have communicated and allied with in the recent past, providing a baseline degree of evidence supporting embeddedness theory. Having passed this weak test, the power of the network approach is more clearly demonstrated through confirmation of the structural and positional embeddedness hypotheses, which highlight the importance of less obvious relationships in establishing group alliances.

Consistent with the structural embeddedness hypothesis, the data show that interest groups consider not only their past dealings with other groups when making alliance decisions, but also the presence or absence of ties with mutual third parties. These ties not only facilitate the flow of information about potential allies, but they also help to build trust because of the salience of reputation effects on future alliances. Testing this hypothesis required data not only about interest groups, but also about the other political actors (such as legislators and executive agencies) who observe the alliance behavior of groups when they move in and out of an issue network.

While structural embeddedness illustrates how groups rely upon information from actors close to them in the network, positional embeddedness highlights how the overall organization of an issue network is informative for groups' strategic decisionmaking. I found that as groups become more central to an issue network, they become more visible, prominent, and, thus, more desirable alliance partners. Analyzing a group's place in the entire issue network was particularly important in the case chosen for this study, since many of the actors who shaped the welfare reform debate in Wisconsin were not interest groups, but state legislators and the governor.

Consider two examples of how embeddedness in alliances shaped the behavior of groups in my case study.⁹ A certain interest group had a conservative philosophy that should have predisposed it to favor Wisconsin's welfare reform, but it also had specific interests that led it to oppose significant aspects of these reforms. Liberal groups were aware of this conflict and tried to encourage the conservative group to oppose the reform publicly. However, efforts to develop an alliance between the conservative and liberal groups did not get very far because the absence of prior ties among the groups made it impossible for the conservative group (which had more to lose from an alliance) to trust the liberal groups. Moreover, many of the conservative group's allies on other issues had come out publicly in favor of W-2. To ally with the liberal groups on this one issue, although in the conservative group's interest, would have undercut important alliance partners on other issues. As a result, the conservative group chose not to ally with the liberals and instead elected to remain neutral on welfare reform. As a contrasting example, concrete personal relations made it possible for conservative business groups and liberal groups to work together, especially in Milwaukee during the implementation of welfare reform. Histories of communication, respect, and trust among these groups facilitated the formation of alliances and brokering of compromise to mitigate some of the more draconian aspects of W-2's implementation while at the same time demonstrating broad support for a conservative shift in welfare policy.

LEARNING FROM A CASE STUDY

Given that the research design for this network study required the in-depth analysis of a single state and single issue, to what extent can my results be extrapolated to the alliance behavior of interest groups in other contexts? There are at least four reasons to have confidence in these results (Nicholson-Crotty and Meier 2002). First, the study seeks to generalize to units of analysis other than the state or welfare policy. The political actors in the study

are interest groups, and there are a variety of types of groups represented in the analysis (including trade associations, unions, think tanks, citizen advocacy groups, and non-profit service providers). Since my research question is about with whom groups choose to form alliances rather than whether they choose to become involved in a policy issue (since the sample design selected groups already involved in welfare reform), the between-group comparison provides the appropriate test of the stated hypotheses.

Second, my research design is justified in that the emergence, proposal, and passage of W-2 in Wisconsin provided a unique opportunity to observe the formation, strengthening, and dissolution of policy alliances. The single-state, single-issue nature of the study allowed for the consideration of a greater amount of contextual detail than would have been possible with a research design that included multiple states or issues. Detail is valuable in this case because Wisconsin's welfare reforms were enacted through a series of policy events. The case study allows us to understand how different groups were involved in different events and how their positions and alliances varied according to changes in the strategic context. Furthermore, Wisconsin's welfare reforms in the 1990s were important not only for Wisconsin, but they helped pave the way for reform efforts in other states and federal welfare reform enacted in 1996.

Third, the study of networks requires the collection of data about a whole system of actors in such a network. Individual states provide a desirable context for this kind of analysis because the number of actors in a state is generally measured in hundreds, rather than thousands, as it can be at the national level. Fourth, Wisconsin serves as a good case for this study because its political processes are not especially atypical of those in other states or at the national level. Wisconsin is a diverse state with sizeable urban centers and minority populations, as well as small-town and rural populations. According to the United States Census Bureau (2002), 32.14 percent of all Wisconsin residents live in metropolitan areas and 11.07 percent of Wisconsin residents identify as non-white or multi-racial. With its competitive two-party system and professional legislature, it operates politically much like the national government, only on a smaller scale. A variety of studies of comparative state politics validate this picture of Wisconsin. For example, Holbrook and Van Dunk (1993) calculated that Wisconsin ranks 14th in district-level electoral competition and scored only a few points below the most competitive states. Patterson (1996) classified Wisconsin as one of only nine states with a professional legislature supported by large full-time, well-paid staff.

Despite the advantages of this research design, there are some limitations. For example, by focusing only on welfare policy, the analysis may not fully

tap variations in alliance behavior associated with the nature of issues, which is a concern since Heinz and his colleagues (1993) found variations in issue network structure across policy domains. Of course, this study does not seek to explain the overall structure of policy domains, but to investigate the decision processes of groups in forming alliances.

CONCLUSION

An interest group's decision about with whom to ally itself in a public policy debate can determine its success in advocating its position and, thus, the shape of public policy. Alliances with the wrong partners can quickly undo much of what a group has worked for over the years. Conversely, a well-chosen portfolio of relationships with other groups can allow a group to leverage its influence in the policymaking process (Heaney 2003).

I have used network analysis to explore these alliance decisions because it allows notions of trust and reputation, so important in any alliance decision, to be examined based on the micro-structural context of political actors. In doing so, network analysis exploits the assumption that relevant alliance information is sensitive and localized in an issue network rather than widely known throughout a political system. Strange-bedfellow alliances may sometimes develop simply because key actors in interest groups know, trust, and respect one another. Experience working together on other issues, even if unrelated to the question on the table, can provide the opportunity to see beyond ordinary political divisions. Relations with common third parties may serve as a basis for trust among actors who otherwise know little about one another. Conversely, the absence of such direct or indirect personal relations may lead to missed opportunities and a lack of trust among actors who should be natural allies. Of course, embeddedness may also hinder a group's goals, since personal relations may informally commit a group to continue working with past partners, even if those alliances no longer maximize the group's short-term political objectives.

This project demonstrates the benefit to political scientists of linking the sociological study of issue networks more concretely to investigations of interest group strategies. If issue networks are the fluid structures that Heclo (1978) described, how do groups make sense of their environment and decide with whom to work? How can groups strategize about alliance formation when new issues or proposals are brought to the table or previously disconnected issues become linked (as when W-2 formally linked state welfare and child care policies)? The social structure of issue networks mediates the flow of information in ways that enhance and inhibit the facility of in-

terest groups to decide about alliances. Heinz and his colleagues (1993) demonstrated how groups communicate within networks, but they did not analyze how groups consciously change network structure by forming and breaking alliances. Previous contacts in a network, third-party observation of a potential alliance partner, and the centrality of an alliance in the issue network increase the likelihood of alliance formation, even controlling for ideology and other interest forces at work on groups. As issue networks continue to become more crowded with heterogeneous interest groups, the importance of these mechanisms for making decisions about alliances under conditions of uncertainty is likely only to increase.

APPENDIX A: DEFINITION AND MEASUREMENT OF VARIABLES

Dependent variable

Alliance in period t. Takes the value of 1 if both members of the dyad reported having an alliance with one another in period t, 0 otherwise. Relevant interview question: "Please place a check mark in the column marked 'alliance' next to the names of all organizations with which your organization formed an alliance in trying to influence this event."

Relational Embeddedness

Prior alliance on non-welfare issue. Takes the value of 1 if there was an alliance in the dyad on an issue other than welfare prior to 1993, 0 otherwise. Relevant interview question: "Now for each of the organizations on this list, please place a check mark in the column marked 'previous' if your organization had formed an alliance on a non-welfare-related issue prior to 1993."

Contact in the communication network at t-1. Takes the value of 1 if there was any communication in the dyad at t-1, 0 otherwise. Relevant interview question: "Please place a check mark in front of the names of all organizations or individuals on this list with whom your organization frequently discussed routine policy matters related to the enactment of W-2." Similar questions were asked regarding the waivers and the implementation of W-2.

Structural Embeddedness

Close communication with common third party at t-1. Takes the value of 1 if both members of the dyad had close-and-trusted communication with a common third party at t-1, 0 otherwise. This measure is based on the complete network of 108 political actors, thus allowing a dyad to be "observed" by non-interest-group actors. Relevant interview question: computed from the *contact* question, above.

Positional Embeddedness

Combined centrality in the communication network. Following recent studies (Gulati and Gargiulo 1999; Podolny 1994), the Bonacich (1987) eigenvector measure of network centrality is used to capture centrality in the alliance network. The Bonacich (1987) measure relies on the degree of betweenness to obtain initial values of centrality, and then uses

an iterated approach in which the centrality of a group is weighted by the centrality of other points to which it is connected. This measure is based on the complete network of 108 political actors, thus the centrality of a group's position depends not only on its relation to other groups, but also on its relation to non-interest-group actors. UCINET was used to calculate centrality. Relevant interview question: computed from the *contact* question, above.

Issue Niche

Issue niche. The vector of issues for which the respondent indicated his or her group was "very involved." Relevant interview question: "Please refer to the following list of policy issues. Can you please tell me which of the issues regarding the enactment of W-2 were of particular concern to your organization? For each of these issues, was your organization 'very involved' or only 'somewhat involved'?" (Similar questions were asked regarding the waivers and the implementation of W-2.) The list included the following policy issues: 1. Political process of reform; 2. Administration and contracting for services; 3. Caseload management and eligibility determination; 4. Milwaukee's unique situation; 5. Workforce integration; 6. Behavior adjustment; 7. Pregnancy; 8. Education; 9. Child care; 10. Immigration-related issues; 11. Health care; 12. Linkages to food stamps; 13. Transportation; 14. Disabilities; 15. Domestic violence; 16. Kinship care.

Percentage of overlap in issue niches. The percentage of issues common to both groups' issue niches. Relevant interview question: same as the *issue niche* question, above.

Group Ideology

Liberalness of group ideology. Computed based on the respondent's ranking of various explanations for the causes of poverty. Relevant interview question: "Experts on poverty disagree about what causes individuals and families to be poor. We would like to know the general position of your organization on this issue. Referring to the following list, please review four reasons different experts have given to explain poverty. Please rank these positions from 1 to 4 according to your understanding of the position of your organization." Categories of explanation include: 1. Structure of the economy; 2. Individual behavior/choices; 3. Government policy; 4. Societal injustice.¹⁰

Ideological distance between groups in the dyad. Squared difference between the answers on the liberal ideology index of the two groups in the dyad. Relevant interview question: same as the *ideology* question, above.

Group Capacity

Lobbying budget. Thousands of dollars allocated to lobbying in the group's 1999 budget. Relevant interview question: "What is your organization's annual lobbying budget?"

Group Politicization

Organizational focus on advocacy. Takes the value of 1 if the respondent indicated that the group's primary focus is on advocacy, as opposed to research, services to professional members, or services to low-income or at-risk populations, 0 otherwise. Relevant interview question: "Is the primary focus of your organization's work on: 1. Direct service to low-income or at-risk populations; 2. Research; 3. Advocacy; or 4. Services to individual members or member organizations?"

Group Deliberation

Centralization of decision process. Scored 1 to 4, with 4 indicating the highest level of centralization of the group's decision process (position externally dictated) and 1 indicating the lowest level (debate among general membership). Relevant interview question: "Please look at the following list of decision methods and tell me which one best describes how your organization arrived at its position (or lack thereof) on W-2?: 1. Our position was determined by our executive director; 2. Our position was determined by an executive committee or board of directors; 3. Our position was determined based on deliberation at staff meetings; 4. Our position was determined by the general membership of the organization."

Framing

"Justice for the poor" framing. Takes the value of 1 if the group framed its opposition to welfare reform in terms of "justice for the poor," 0 otherwise. Based on newspaper reports and a respondent's answers during interviews, I made a judgment about whether this frame was used by the group. Relevant interview question: "What was your organization's position on the enactment of W-2?"

Collective Action

Pro-Thompson administration. Takes the value of 1 if the group reported that it "supported" or "mostly supported" the position of the Thompson administration at t, 0 otherwise. Relevant interview question: "Did your organization support W-2, as proposed by the Thompson administration?"

Policy loss in period t-1. Takes the value of 1 if the group indicated that its "victories were infrequent and seldom on our most important issues" or that it was "never or rarely successful" at t-1, 0 otherwise. Relevant interview question: "Considering the positions advocated by your organization for changes in W-2, how successful would you say your organization was in actually bringing about these changes in the law? 1. Always or almost always successful; 2. Not always successful, but achieved several victories on important issues; 3. Occasionally successful; victories were infrequent and seldom on the most important issues; 4. Rarely or never successful."

Office in the same city. Takes the value of 1 if the headquarters of both groups in a dyad were located in the same city, 0 otherwise. Relevant interview question: "In which city is your organization's headquarters?"

Instruments

Prior alliance with the New Hope Project. Takes the value of 1 if the group was in alliance with the New Hope Project prior to 1993, 0 otherwise. Relevant interview question: same as the *prior alliance* question, above.

Prior alliance with experimenting counties. Takes the value of 1 if the group was in alliance with Fond du Lac or Pierce County prior to 1993, 0 otherwise. Relevant interview question: same as the *prior alliance* question, above.

Welfare a predominant concern. Takes the value of 1 if the respondent indicated that Wisconsin's welfare policy was "a predominant concern" of the group, 0 otherwise. Relevant interview question: "Would you characterize your organization's participation in Wisconsin's welfare policy as: 1. A predominant concern; 2. One of several concerns; or 3. Incidental to our regular business?"

Very involved in health issues. Takes the value of 1 if the respondent indicated that the group was “very involved” in health issues, 0 otherwise. Relevant interview question: “Organizations can be active in many different areas of state public policymaking. Could you please tell me the numbers of those policy areas on this list in which your organization is particularly active?”

Number of registered lobbyists. Number of lobbyists registered with the Wisconsin Ethics Board during the 1995–96 legislative session. Relevant interview question: “How many lobbyists are registered to advocate on behalf of your organization in Madison?” I verified and corrected (if necessary) answers to this question against public records (Wisconsin Ethics Board 1999).

Headquarters in Madison. Takes the value of 1 if the group’s headquarters was in Madison, 0 otherwise. Relevant interview question same as the *office in the same city* question, above.

APPENDIX B: PROCEDURE FOR ESTIMATING TWO-STAGE CONDITIONAL MAXIMUM LIKELIHOOD (2SCML) REGRESSION MODELS

Following Rivers and Vuong (1988, 352–3), the 2SCML is estimated in two steps. First, estimators $\hat{\Pi}$ and $\hat{\Sigma}_{vv}$ are obtained by maximizing the marginal log likelihood for Y_i : $L_n^g(\Pi, \Sigma_{vv}) = \sum_{i=1}^n \log g(Y_i|X_i; \Pi, \Sigma_{vv})$ with respect to Π and Σ_{vv} . Second, the conditional log likelihood for y_i , setting $\Pi = \hat{\Pi}$, is maximized with respect to γ , β , and λ : $L_n^f(\Pi, \Sigma_{vv}) = \sum_{i=1}^n \log f(y_i|Y_i, X_i; \gamma, \beta, \lambda, \hat{\Pi})$.

APPENDIX C: DYADIC DEPENDENCE

A potential statistical problem is present in the 2SCML simultaneous probit estimation I use to test my hypotheses stemming from the dependence of dyads in the data. In a sense, each interest group appears in the dataset 56 times (one for each of the other interest groups with which it could potentially ally itself). Therefore, it is probable that some of the dyads in the sample are not independent from other observations. Consider a simple example from ordinary interpersonal relationships. My relationship with my barber is independent from my relationship with my auto mechanic, but it is probably not the case that my relationship with my mother is independent from my relationship with my father. A good relational model should allow for dependence among at least some dyads. I have tried to model most of this dependence explicitly through the inclusion of network measures as explanatory variables, but unobserved dependence may be reflected in the error term and thus, cause bias in the estimates of the model parameters and standard errors.

A common approach to avoid such bias is to use a modification of the Quadratic Assignment procedure (Krackhardt 1987, 1988; Gulati and Garguilo 1999), using Monte Carlo simulations in which the dyadic structure is randomized and parameter estimates are simulated without relying on the independence assumption. The disadvantages of this procedure are that it is computationally cumbersome and that it detects only the presence, but not the degree, of a dependence problem.¹¹ In this study, I take a somewhat different approach, but I follow the spirit of randomization proposed by Krackhardt (1987, 1988) and use a combination of bootstrapping and robust cluster analysis (Thompson and Seber 1996; Efron and Tibshirani 1993). The bootstrapping approach is to draw 500

samples of 56 dyads from the data with replacement. The dyads are selected such that each interest group is guaranteed to be included in every sample, but multiple appearances occur by chance rather than by design. Thus, this bootstrapping drastically reduces, but does not completely eliminate, repetition of dyads. To correct for any remaining dependence, I use robust cluster analysis to impose the assumption of common variance on dyads that share a common interest group. While either bootstrapping or robust cluster analysis alone would address most potential dyadic interdependence, the combination deals with this problem fully. However, this approach probably overcorrects by imposing dependence on dyads that are actually independent. It is reasonable, then, to view estimates generated by my simultaneous profit analysis with and without my correction for dependence as extreme bounds for the true parameter values (Leamer 1978).

The results of the combined bootstrap-cluster analysis (generated in Stata 6.0) are reported in Table C1, including the observed parameter, estimate of bias, standard error, and the bias-corrected 95-percent confidence interval for the network variables. The results indicate that the 2SCML probit analysis reports parameters that exhibit a small bias and have standard errors that are slightly too small. Overall, the bootstrap-cluster approach yields somewhat weaker support for my embeddedness hypotheses than does 2SCML, but the key substantive conclusions are the same. In the equation for alliances in 1995–96, the statistical significance of the endogenous alliance term falls below the .05 statistical significance level (but remains within the .10 level), while all other parameters retain their statistical significance and correct direction. In the equation for alliances in 1996–99, the coefficient for prior alliances on a non-welfare issue falls below the .05 statistical significance level (but remains within the .10 level), and the third-party communication variable is not statistically significant (as in the original model); the other variables retain their statistical significance.

Thus, while the bootstrap-cluster analysis detects some bias from dyadic dependence, this effect is not substantial enough to negate the findings of this study. The centrality and third-party variables retain the statistical significance they held in the original model, validating the importance of network effects beyond the dyad in encouraging alliance formation. The statistical significance of the dyadic effects of previous alliances is reduced somewhat, but the relational embeddedness hypothesis still garners a reasonable degree of support in these results.

ENDNOTES

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1. This section draws upon the extensive literature in economics on the logic of decisionmaking under conditions of asymmetric information, especially Rasmusen 1989.
2. This argument draws upon Williamson's (1975, 26–30) discussion of opportunism in partnership relationships.

Table C1. Analysis of Dyadic Dependence

Variable	Period	Beta	Bias Estimate	S. E.	Bias-Corrected 95% Confidence Interval
Alliance in period t-1 (endogenous)	1995-96	1.047	0.087	0.564	-0.091 2.026
Prior alliance on non-welfare issue		0.773	0.021	0.147	0.482 1.087
Contact in the communication network at t-1		0.520	-0.017	0.271	0.011 1.040
Close communication with common third party at t-1		0.744	0.018	0.163	0.430 1.069
Combined centrality in communication network at t-1		0.153	-0.001	0.007	0.001 0.030
Alliance in period t-1 (endogenous)	1996-99	1.832	0.028	0.547	0.772 2.829
Prior alliance on non-welfare issue		0.318	0.015	0.181	-0.037 0.648
Contact in the communication network at t-1		0.389	0.018	0.197	0.002 0.775
Close communication with common third party at t-1		-0.236	-0.013	0.156	-0.554 0.637
Combined centrality in communication network at t-1		0.040	0.001	0.014	0.009 0.067

Note: Dependent variable = 1 if an alliance exists in period t, 0 otherwise. Case = a dyad of interest groups. Number of interest groups = 57. Number of dyads = $(Gs^2 - IGs)/2 = 1596$. Bias = the difference between the beta estimated using 2SCML and the mean of the betas estimated using the bootstrap-cluster analysis. The models were estimated using all the control variables and instruments listed in Table 1. The complete set of coefficients are available from the author.

3. The newspapers whose articles were analyzed were the *Milwaukee Journal-Sentinel*, *The Capital Times*, the *Wisconsin State Journal*, and *The New York Times*. A total of five mentions during these periods constituted a sufficient condition for inclusion of the actor in the sample. These time periods coincided with the significant events in Wisconsin welfare reform that I identified.

4. Private citizens representing themselves were not included in this tally. Legislators were not counted merely for attendance at the hearing, but they were counted when giving formal testimony or registering a position before the committee. Appearances at two separate hearings was a sufficient condition for inclusion of that actor in the sample, with registrations only counting as one half of an appearance. These data were obtained from the published bulletins of the Wisconsin Senate and Assembly (Dykman 1997; Melvin 1995; Miller 1998; Theobald 1995; Sanders 1997; Schneider 1995, 1997) and from the official Record of Committee Proceedings for each hearing to which these bulletins refer.

5. This argument draws on Olson's (1971, 35) insight that large actors are more likely to provide a public good on their own than rely on cooperation from small actors.

6. My respondents registered some disagreement on the existence of alliances. If dyads where one group claimed an alliance, but the other group did not, are counted as alliances, then the percentage of alliances expands to 16.2 percent during enactment and 15.3 percent during implementation. These disagreements may exist because of differences in recollection, substantive disagreement on what transpired between the two parties, differences in interpretation of the concept "alliance," and social hierarchies in which higher status parties do not wish to recognize their affiliation with lower status parties (Brewer 2000; Feld and Carter 2002; Holland and Leinhardt 1973; Marsden 1990).

7. I estimated the 2SCML model using Stata 7.0 with the procedures explained in Appendix B. As a check on these results, I also estimated a generalized two-stage probit model (GS2P) using Limdep 7.0 (Lee 1981; Maddala 1983). While there were some differences in the values of the estimated coefficients between the two methods, the only substantive difference was that the lagged alliance variable was statistically significant in the 1995–96 model for the 2SCML estimation but not for the G2SP estimation. (The G2SP results are available from the author upon request.) This suggests that the results of the 2SCML model are, for the most part, robust to alternative estimation methods. One potential problem remains in that both 2SCML and G2SP assume independent observations, while dyads of interest groups may not be independent, due to the appearance of each group in 56 different dyads. This issue is addressed in Appendix C.

8. Estimates of the first-stage equations using instrumental variables are not reported (they are available from the author upon request), but they fit the data reasonably well. Estimates for 1996–99 achieve a PRE of 34.07 percent, and estimates for 1995–96 achieve a PRE of 23.63 percent. The coefficients for three of six instruments are statistically significant in the 1996–99 equation, and two of six are statistically significant in the 1995–96 equation. Comparison of the two-stage model against a single-equation model (in which $Alliance_{t-1}$ is assumed to be exogenous) suggests that the instruments provide the desired statistical leverage. For 1995–96, the coefficient estimate for $Alliance_{t-1}$ deflates from 2.30, when exogeneity is assumed, to 1.04, when endogeneity is assumed. For 1996–99, the coefficient estimate for $Alliance_{t-1}$ changes from 1.35, when exogeneity is assumed, to 1.83, when endogeneity is assumed. In both 1995–96 and 1996–99, assuming exogeneity causes the ratio of the coefficient to the standard error for $Alliance_{t-1}$ to fall substantially, but this

does not lead to the reversal of the estimated coefficient's sign or the nullification of statistical significance.

9. These examples were derived from my interviews. The names of the actors involved have been deleted to ensure anonymity for my respondents.

10. The academic literature on the causes of poverty is vast. Some of the sources I consulted in formulating this question included Danziger, Sandefur, and Weinberg 1994, Gans 1995, Mayer 1997, Mead 1986, Murray 1994, Piven and Cloward 1993, and Wilson 1987.

11. Another approach is the maximum likelihood analog to generalized least squares (GLS). Since GLS would require the construction and inversion of a 1596-by-1596 matrix, there are practical advantages to pursuing other approaches.

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