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The Agenda Setting Powers of Party Organizations

A dissertation submitted in partial satisfaction of the
requirements for the degree
Doctor of Philosophy

in

Political Science

by

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2013

The dissertation of Andrew Scott Waugh is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Chair

University of California, San Diego

2013

DEDICATION

To my San Diego family:

Justin Gottschalk, Molly Hamilton, and Jessica Novak.

EPIGRAPH

Nobody's above the joke.

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I would like to take this opportunity to thank all of my professors and colleagues at UCSD for their time and efforts in helping me to complete this project. In particular, I would like to thank Keith Poole, James Fowler, and Sam Kernell. These men have been my primary advisors and mentors in the field of American politics, and I have been fortunate to work both with and for them throughout my graduate school career. Without their support, this project would never have been conceived, let alone finished. I would also like to thank Sam Popkin for the help he provided me in the early developmental stages of this project.

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ABSTRACT OF THE DISSERTATION

The Agenda Setting Powers of Party Organizations

by

Andrew Scott Waugh

Doctor of Philosophy in Political Science

University of California, San Diego, 2013

Professor Keith T. Poole, Chair

In this dissertation project, I challenge extant theories of party organizations in the United States and the role that party organizations play in conditioning the behavior of members of Congress. In the first Chapter, I outline the theoretical and empirical deficiencies that have inhibited the study of party organizations, and I offer a new theory of party organizations that more appropriately characterizes party organizational responses to institutional constraints. In the second Chapter, I conceptualize party organizations, interest groups, and campaign committees as nodes within campaign finance networks and assemble networks of campaign finance activity for each electoral cycle from 1980 to 2010 using itemized contributions records provided by the FEC. I find strong evidence that campaign finance networks have become more partisan over time and that party organizations are

central actors in that process. In the third Chapter, I use campaign finance data to develop new measures of state party organizational strength and national integration, and I demonstrate the relationship between these measures and political competition and partisan polarization. Finally, in the fourth Chapter, I conduct regression analyses to demonstrate that party organizational activity, contrary to existing theoretical and empirical work, has a strong positive influence on the partisan behavior of members of the House of Representatives. This finding suggests that party organizations play an important role in the election of House members who are willing to cooperate with party leadership, solidifying negative agenda control powers and enhancing prospects for the advancement of positive agendas.

1 Polarization, Agenda Control, and Party Organizational Resurgence

In this dissertation, I explore the relationship between two concurrent phenomena in American politics: partisan polarization in Congress and party organizational resurgence in federal elections. Ideal point estimations based on roll-call voting behavior provide strong evidence that congressional polarization has dramatically increased since the 1970s (Poole & Rosenthal 1984, Poole 2005, McCarty, Poole & Rosenthal 2007, Jacobson 2000, Jacobson 2005, Jacobson 2006). Survey data demonstrate that the organizational strength, capacity, and integration of local, state, and national party organizations have expanded substantially over a similar time period (Conway 1983, Gibson, Cotter, Bibby & Huckshorn 1983, Gibson, Cotter, Bibby & Huckshorn 1985, Gibson, Frendreis & Vertz 1989, Frendreis, Gibson & Vertz 1990). These two phenomena, I will argue, are driven by the desires of national party leaders to increase intra-party homogeneity in order to achieve programmatic policy goals (APSA 1950, Rohde 1991, Cox & McCubbins 1993, Aldrich 1995, Aldrich & Rohde 2000, Aldrich & Rohde 2001, Cox & McCubbins 2005).

Though polarization has complex origins, most authors agree that it is largely an elite-driven phenomenon caused in part by party leaders in Congress exploiting institutional powers to effect party loyalty (Jacobson 2000, Fiorina, Abrams & Pope 2005, McCarty, Poole & Rosenthal 2007). Party leaders in modern congresses enjoy a variety of institutional powers over rank-and-file members, in-

cluding control over committee assignments, which give them the ability to reward party loyalty and punish defection (Cox & McCubbins 1993). The Speaker of the House, as leader of the majority party, enjoys additional institutional power in the form of legislative agenda control. By controlling access to the floor, the Speaker can reward loyal partisans, punish defectors, and prevent the minority party from advancing its policy agenda or introducing legislation that would fracture the majority party coalition (Cox & McCubbins 1993, Cox & McCubbins 2005). The authors term this 'procedural cartel theory' (PCT). In order to maximize policy success and loyalty, the Speaker ensures that nearly all legislation that reaches the House floor does so on terms that favor the majority and/or weaken the minority, making the legislative climate powerfully divisive (Cox & McCubbins 1993). Wielded artfully, this divisiveness translates into polarized roll-call voting. It is important to note that agenda-setting power is essentially a negative power. The Speaker can effectively keep legislation off the agenda, but has limited ability to force legislation onto the agenda (Cox & McCubbins 2005). Institutional powers alone, therefore, are insufficient for party leaders to advance programmatic policy; the holy grail of American politics (APSA 1950).

Conditional party government theory (CPG) argues that positive agenda control power, that is the power to advance programmatic policy, must be delegated to party leaders by rank-and-file members, and that the amount of power delegated increases as the homogeneity of the party caucus increases (Rohde 1991, Aldrich 1995, Aldrich & Rohde 2000, Aldrich & Rohde 2001). When a majority party is ideologically cohesive, CPG states that the party caucus will grant leaders broad power to achieve policy goals, because the risk of agency loss is low. Conversely, when a party caucus is ideologically divided, CPG states that party members will retain stronger veto power over the actions of party leaders in order to prevent agency loss. Consequently, heterogeneous parties incur greater transaction costs when arriving at agreements, if agreements are reached at all, limiting the number and scope of policy goals that the leadership can achieve.

Taken together, CPG and PCT provide a complete framework from which to analyze the strategic motivations of policy-oriented party leaders as they develop

electoral strategies. Vast institutional powers accrue to the party leadership when a party wins majority status in the House, and these powers exist independently of party homogeneity (Cox & McCubbins 1993, Cox & McCubbins 2005). It is not surprising, therefore, that nearly every study party resource allocation in congressional elections suggests that the primary goal of party organizations is to maximize seats (Jacobson 1985-1986, Herrnson 1989, Damore & Hansford 1999, Maisel, Maestas & Stone 2002). Positive agenda control power, however, lacks a permanent institutional basis and depends entirely on the homogeneity of the party caucus (Aldrich & Rohde 2000). The homogeneity of the party caucus, in turn, depends crucially on the policy preferences of congressional candidates, over which party leaders in Congress have very little direct control (Herrnson 1986, Jacobson 2004, Herrnson 2004). Nevertheless, it seems reasonable to expect that the parties would use their organizational capabilities, whenever possible, to structure the election climate in such a way that they will yield loyal partisan candidates who will facilitate the positive agenda control once elected.

Unfortunately, while fairly good evidence exists that party, broadly conceived, impacts congressional voting behavior (Hager & Talbert 2000, Snyder & Groseclose 2000, Aldrich & Rohde 2001, Ansolabehere, Snyder & Stewart 2001b, Cox & Poole 2002), studies examining the effects of party organizational variables have been inconclusive at best (Herrnson & Patterson 1995, Cantor & Herrnson 1997). I argue, however, that these results stem from largely correctable theoretical and methodological deficiencies.

The theoretical deficiencies stem from the 'candidate-centered elections' paradigm that dominates the study of both congressional elections and party organizations (Bibby 2002, Herrnson 2002). This paradigm derives from a principal-agent analysis of the party-candidate relationship. It holds that a variety of institutional factors (e.g. primary elections, federalism, campaign finance laws) conspire to drastically limit the ability of parties to control the selection and election of their candidates (Schlesinger 1984, Schlesinger 1985, Schlesinger 1991). By this logic, party is only relevant to candidates to the extent that it increases their reelection chances (Mayhew 1974), and the direct effect of party organizations on electoral

success has proven difficult to establish (Crotty 1971, Herrnson 1986, Frendreis, Gibson & Vertz 1990, Pomper 1990). It is clear, however, that party is a powerful cue to voters (Berelson, Lazarsfeld & McPhee 1954, Campbell, Converse, Miller & Stokes 1960, Converse 1964, Popkin 1994), and that voters associate the parties with constellations of issues and ideologies (Petrocik 1992, Gerring 1997, Gerring 1998). This suggests that, when the party is popular, candidates should be more willing to adopt party positions. Indeed, procedural cartel theory holds that one of the primary goals of negative agenda control is to protect the appearance of a homogenous party brand by preventing divisive legislation from being considered in Congress (Cox & McCubbins 1993, Cox & McCubbins 2005). Ostensibly, a strong brand helps preserve the party popularity, making party positions more appealing to candidates.

In evaluating the actions and effectiveness of party organizations, 'candidate-centered elections' fails as a concept because its principal-agent framework implies an inherently adversarial candidate-party relationship. Scholars often place the 'candidate-centered elections' paradigm and 'programmatic parties' (APSA 1950) paradigm on opposite poles and attempt to establish which paradigm more effectively describes the activities of party organizations and the behaviors of congressional candidates (Cantor & Herrnson 1997). In this crude comparison, the 'candidate-centered elections' paradigm invariably succeeds. Making this comparison requires us to assume that party organizations are either (1) naively attempting to control candidates directly, or (2) not attempting to affect candidate behavior at all. The former implies that the parties are unaware of their strategic situation vis a vis candidates, and the latter implies that the parties choose to ignore the pursuit of positive agenda power.

Neither of these implications seems realistic. I argue that we should expect parties to use their organizational capabilities to indirectly affect the behavior of candidates and congressmen by conditioning the environments (elections and capitol hill, respectively) in which their activities take place. Though the party organizations have little institutional power with which to control candidate behavior, they have cultivated a niche in the world of congressional elections by

providing candidates with a variety of support services (Bibby 1994, Kessel 1994, Wirt 1994, Beck 1996, Herrnson 2002, Herrnson 2004, Jacobson 2004). These services include donor and voter databases, issue development support, campaign handbooks, training seminars, and money. An efficient party organization can provide its candidates with a good deal of inexpensive support and information. If the parties are able to provide this information and support at a lower cost than the candidates could procure it from other sources, then we should expect candidates to voluntarily rely on the services of party organizations.

Essentially, when candidates elect to use party organizational support, they gain access to a *social network* that the party organization has assembled. This network may include donors, PACs, consultants, polling firms, volunteers, and potential voters. The fact that the party organization, and not the candidate, assembled this network, I believe, has important consequences for the way in which the candidate can effectively conduct a campaign. When party organizations assemble networks, it is unlikely that they could anticipate the idiosyncrasies of particular campaigns. Rather, they would attempt to build their campaign support network using more permanent bases; probably some combination of party platform and constituency characteristics. The relative weight of these concerns is likely a function of organizational strength and effectiveness, with more hierarchically organized organizations more strongly reflecting party ideological concerns. Candidates, therefore, inherit a network with existing connections and communication patterns defined by the party organization.

As this network becomes better established, two results should obtain. First, it should be more effective at delivering electoral success and thus more appealing to candidates, and second, it should be more expensive for candidates to alter. Operating a campaign using such a network would require a candidate to adopt positions and communication styles that maximize the utility of that network, since any deviation would likely detract from the network's effectiveness. Thus, we should expect candidates who utilize such networks to more closely reflect party ideology, and, when they are elected, serve as more loyal partisans in Congress, resulting in more positive agenda control power for party leadership.

These empirical implications are evaluated in Chapter 4.

The methodological deficiencies in the party organizations literature derive straightforwardly from the theoretical deficiencies. One problem that limits the study of party organizations is a lack of systematic data on the organizations as they have evolved over time. State party organizations, for example, have been surveyed only twice in the past 30 years, once in the early 1980s (Gibson et al. 1983), and once in 1999 (Aldrich 2000).[1] Local party organizations, similarly, have been surveyed only twice, in 1980 and 1996 (Frendreis & Gitelson 1999). With data being gathered only intermittently, it is difficult to compare the development of party organizations to other trends for which data is more readily available, such as congressional polarization. When independent variables from these studies are used in regressions, as in Cantor & Herrnson (1997), analysis is limited to only two years. This disregards substantial portions of dependent variable and covariate data, which are available for most years, or at least most election cycles. The inconsistent gathering of data on party organizations, I believe, reflects the perceived unimportance of party organizations by the literature. Given that most accounts of congressional agenda setting and congressional elections rely on the candidate-centered elections paradigm, it is unsurprising that scholars have chosen not to invest their energies in gathering more complete data.

Clearly, improvements are needed in the variables used to measure party organizational strength at the state and national level, and the level of integration between state and national party organizational committees. In Chapter 3, I use information gained from analyses of *campaign finance networks* to derive new measures of party organizational strength and state-national party integration. The assembly and analysis of the campaign finance networks themselves is discussed in Chapter 2. Crucially, I am able to use these networks to estimate the organizational strength and integration of state and national party organizations for every federal electoral cycle from 1980 to 2010. These measures therefore offer a marked improvement over previous measures.

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[1]See Hershey (2007), pages 58-63 for a short summary of these surveys.

1.1 Previous Work

Existing work on party organizations, though limited in its discussion of impacts on congressional agenda setting, does effectively capture the nature of party decline and resurgence in the United States. When scholars began noticing the revival of party organizations in the 1980s (Gibson et al. 1983, Gibson et al. 1985), the literature quickly seized on the opportunity to describe the causes of this revival and the characteristics of the emergent party organizations. In this section, I briefly review this literature and extract its general findings on the structure and purpose of modern party organizations.

1.1.1 Party Decline and Restructuring

Most literature on party organizational resurgence puts it in the context of a general party resurgence that has occurred since the late 1980s as parties emerged from all-time lows in popularity and relevance in the 1960s and 1970s. Beginning in the 1950s (APSA 1950), and as late as the 1980s (Ware 1985) and 1990s (Coleman 1996a), scholars were theorizing about the death of American political parties, as laws born out of the Progressive Era limited the institutional power of parties in their traditional homes at the local level, and the parties bottomed out in popularity, partisan identification weakened, split ticket voting increased, committee government ruled the house (Krehbiel 1991), and new election laws and media developments made elections increasingly about personal, as opposed to party, characteristics (Mayhew 1974, Popkin 1994).

The most potent explanation for this development held that rising wealth and prosperity in America gave larger segments of the population the need and the means to advocate new and increasingly idiosyncratic political demands (McCarty, Poole & Rosenthal 1997). These new activists, as opposed to the paid party workers of the machine era, were not tied to the party by patronage, which had largely been eliminated by Progressive reforms (Wilson 1966). Furthermore, developments in electoral laws, particularly the adoption of direct primaries and new limitations on party spending, meant that members of Congress were no longer primarily de-

pendent on party support for their nomination and election. This gave the new activists groups the ability to impact congressional elections and the behavior of congressmen by providing crucial votes and monetary support. As congressmen became increasingly dependent on the support of interest groups within their districts, the logic of party decline suggests that they would be increasingly responsive to constituency demands and ignore the comparatively less salient demands of party (Mayhew 1974). This in turn led scholars to develop theories of legislative organization that centered on committees in congress, where the particular demands of individual constituencies could be achieved through series of log-rolls (Krehbiel 1991).

New theories of political parties emerged to deal with the political realities of candidate-centered elections and the proliferation of amateur activists (Wilson 1966). These theories borrowed heavily from economic theories of group formation (Olson 1965) and spatial theories of ideological positioning (Downs 1957). Most authors concluded that parties, having lost their ability to pay workers via patronage, lacked the institutional power to develop and maintain large organizations (Schlesinger 1984, Schlesinger 1985, Aldrich 1995). What organization could be maintained, they argued, would have to appeal to the desires of activists, enticing them to devote their free time to party activity rather than interest group activity. In the short term, these pressures resulted in a severe decline in party organizational activity and power, as activists fled parties to form groups that more closely aligned to their interests (Ware 1985, Coleman 1996a).

The two main parties, however, owing to the institutional implications of single member districts and the strong nationalizing power of the executive branch (Duverger 1954, Cox 1997), maintained their dominant holds on the Presidency and Congress. The continuance of two-party dominance on the national level provided adequate incentive to ensure that party organizations would not remain dormant indefinitely, despite the countervailing pressures of candidate-centered electoral institutions and the congressional committee system. While interest groups could derive limited gains by appealing to individual congressmen or committees, achieving major policy goals at the national level required the presences of a sympathetic

party majority (or a supermajority in many cases) and a sympathetic President. Thus, interest groups, most of which were small in size and scope, had an incentive to invest in a particular party, with the hopes of amassing a coalition that would command the necessary offices and majorities to achieve major policy goals. The political parties, though shells of their former selves at the state and local levels, retained preeminent institutional power at the national level, providing the framework around which aggregations of amateur interest groups could coalesce. Indeed, I find evidence of such coalescence in Chapters 2 and 3 of this dissertation.

Evidence of Organizational Resurgence

During this time of apparent party decline and clear organizational flux in American politics, the party organizations at the national and state levels began to develop strategies for operating in the new institutional and electoral environment. Party leaders of the 1960s clearly understood that the proliferation of amateur interest groups, along with the rise of lobbyists and consultants (Sabato 1981) left the party organizations at a disadvantage as they competed for the attentions of employees, volunteers, candidates and congressmen. At the state and local levels in particular, the party organizations had been decimated as their membership fled to various issue groups and their candidates sought the support of outside organizations. However, the importance of party at the national level, and the policy conflicts and ideological battles that resulted from it, provided the parties with issue platforms (Petrocik 1992) and brand names (Cox & McCubbins 1993) to sell. Thus, activists who were interested in matters of national politics could be counted on to work for the party itself, as opposed to an affiliated interest, and the interests groups could be convinced of their interests in allying with one party or the other and in seeking power through the institutions of party hierarchy (Usher 2000).

The emergence of the national party organizations as independent entities, separate from the organized interests that formed the basis of their coalitions, allowed the national parties to begin funding and reorganizing the state and local parties. This process began in the RNC in the 1960s and in the DNC in the 1970s

(Beck 1996) as the national committees began to develop direct mail donation programs, locating potential party supporters on the basis of demographic characteristics and encouraging them to support the national party. Though these programs were periodically thwarted by the intrusions of presidents into national committee affairs (Bibby 1994), they were ultimately successful at bringing record amounts of money directly to the national party coffers. While the national committees had previously been dependent on contributions from state parties to operate, which made them weak and transient bodies, they were now independently financed and able to pursue the goal of revitalizing party organization throughout the country (Conway 1983, Huckshorn 1994, Herrnson 2002).

The federal structure of the United States creates a natural rift between the national and state party organizations. Since the state and local organizations operate independently of the national parties, the national committees have no institutional mechanism to control the behavior of state organizations, and the state organizations similarly cannot directly control the local organizations (Hershey 2007). However, when the national committees began to finance the activities of the state and local committees, they gained a powerful carrot with which to condition, if not control, the behavior of their subsidiaries. The national committees provided the state parties with money to hire full time staff, create full time headquarters, develop direct mail donor programs, recruit and train candidates, find volunteers, mobilize voters, and coordinate activities with interest groups, campaigns, and local parties (Gibson et al. 1983, Gibson et al. 1985, Gibson, Frendreis & Vertz 1989, Frendreis, Gibson & Vertz 1990, Bibby 1994, Huckshorn 1994, Frendreis & Gitelson 1999, Aldrich 2000, Bibby 2002, Dulio & Garrett 2007).

Observed Effects

The direct effects of party organizational resurgence have proven difficult to establish. The most obvious effect of party organizational resurgence has been the development of active, two-party competition in areas that formally had been single-party dominated (Frendreis, Gibson & Vertz 1990, Schwartz 1990, Kessel 1994, Wirt 1994, Frendreis & Gitelson 1999, Maisel, Maestas & Stone 2002). In

the South particularly, the development of active Republican party organizations allowed Republican candidates to exploit fractures within the Democratic coalition, delivering many Southern congressional seats to the Republicans and providing the GOP with a strong foundation in state and local offices (Petrocik 1981, Aldrich 2000). The state parties increased competitiveness by recruiting and training candidates, and offering campaign aid and services to campaigns (Jacobson 1985-1986, Herrnson 1986). By supplying services, especially to challengers in close races, the party organizations sought to encourage better quality candidates (Jacobson 1989). Even if these candidates did not win, the challenge itself served to remind voters that the party was solvent (Coleman 1996*b*), and could perhaps force the opposing party to divert some of its resources away from other races to defend previously invulnerable incumbents (Jacobson 1985-1986, Herrnson 1986, Damore & Hansford 1999).

In addition to increasing competition in congressional, state, and local elections, the resurgent party organizations developed massive voter mobilization campaigns. By gathering demographic data on voters in their states and localities, party organizations could target their mobilization efforts on those most likely to cast a vote for their party (Rosenstone & Hansen 1993, Holbrook & McClurg 2005, Coffey 2007), maximizing the number of votes that could be delivered for each dollar spent. With party organizations shoring up the electoral base, the candidates were free to develop personal campaigns aimed at delivering moderate and undecided voters (Kessel 1994). This corresponds well with findings that party organizational activity does not increase vote totals or victory margin, it can alter the composition of the electorate (Crotty 1971, Herrnson 1986). A successful party organization could change the structure of the electorate entirely by delivering a large block of extreme partisan supporters, allowing candidates to win elections while running stridently partisan campaigns (Holbrook & McClurg 2005) rather than catering to the median voter (Black 1948, Downs 1957). Indeed, Aldrich (1995) shows that this result follows theoretically from a party model in which the participation of amateur activists is necessary for party success.

Interestingly, party organizational activity has not been shown to affect

candidate positioning in campaigns (Ansolabehere, Snyder & Stewart 2001a) or the voting behavior of congressmen (Cantor & Herrnson 1997). This is not immediately surprising, since party organizations appear to make allocation decisions based purely on competitiveness and the maximization of legislative seats (Jacobson 1985-1986, Herrnson 1989, Damore & Hansford 1999), and congressmen who position themselves far afield from their constituencies are generally more likely to be defeated (Canes-Wrone, Brady & Cogan 2002, Stone & Maisel 2003). However, I argue that party organizations do not attempt to influence candidate behavior and their position-taking directly, but rather seek to condition the environment in which elections take place, thereby limiting the options for candidate and congressman behavior and strengthening the party's hold on its issue agenda. If this claim holds, it is unclear how much significance should be placed in these results, as they may prove entirely consistent with a world in which party organizations set the electoral agenda indirectly. Furthermore, while party organizations do not appear to attempt to control candidate behavior directly on roll-call votes, the national party committees (the NCs, congressional committees, and senatorial committees) have begun requiring mandatory contributions from incumbent congressmen (Monroe 2001, Larson 2004, Hershey 2007), and a recent study suggests that these donations are considered when party leaders make decisions regarding committee transfer requests (Heberlig 2003). Mandatory contributions directly link congressmen and their career ambitions to the activities of the national party organizations.

Concurrent Phenomena

A number of interesting trends have developed in American politics over same time period in which party organizations have strengthened. Most notably, partisan polarization, both in Congress and the electorate, has become more pronounced (Jacobson 2006, McCarty, Poole & Rosenthal 2007), and Congressional parties have begun to exert greater control over their members, particularly in the House (Cox & McCubbins 1993, Cox & Poole 2002, Cox & McCubbins 2005). This is not only a national-level phenomenon. Scholars have found evidence of

polarization in state parties and legislatures as well (Coffey 2007).

The coincidence of partisan polarization and the organizational resurgence within the parties has largely been overlooked thus far by the literature. This neglect, I believe, has crippled the development of a comprehensive theory of the origin and spread of party polarization. Scholars have noted, for example, that both the Senate and the House have polarized, but only in the House do parties have agenda control of the kind that should compel partisan loyalty (Cox & McCubbins 1993, Cox & McCubbins 2005, McCarty, Poole & Rosenthal 2007). McCarty et al. (2007) suggest that institutional explanations are insufficient to explain polarization in the Senate and argue therefore that polarization must be driven by changes in the electorate (primarily the rise in real income). While it is undeniable that real income has risen dramatically in the United States over the past half-century, it remains unclear how this change manifests itself as polarization. McCarty et al. propose that changes in the electorate force candidates to move their policy preferences in the direction of the change, and that as the electorate has polarized, so has the government. This explanation fits in neatly with existing theories of candidate-centered elections and reelection-driven congressmen (Mayhew 1974), but remains agnostic about the mechanism by which disparities in real income become politically salient.

Ostensibly, parties get information about changes in the electorate and use this information to highlight and expand new cleavages and new dimensions of political competition, but how do they do it? Do parties passively collect information and reflect it in their decisions, or do they actively attempt to shape and condition the electoral environment through strategic action? These questions remain unsettled, I believe, due to lack of proper theories and data on the development and activity of party organizations. I argue that analysis of the structure and activity of party organizations is crucial to our understanding of the way partisan polarization becomes political reality. An emerging demographic trend like a rise in real wealth may provide an opportunity for political entrepreneurism, but translating a social trend into a multi-level political mindset grounded in the bitter competition between two parties requires coordination. By analyzing the agenda-setting

powers of party organizations, and the positioning of party organizations within campaign finance networks, I seek to provide the missing link between changes in the electorate and the development of partisan polarization. I am optimistic that such a strategy will prove fruitful in analyzing the emergence of other political cleavages, such as intra-party factions.

1.2   A Theory of Parties and Party Organizations

In this Section, I develop an operational theory of political parties and party organizations, drawing on the works of Downs (1957), Olson (1965), Schlesinger (1991), Aldrich (1995) and others. This theory explains how institutional features of the U.S. electoral system (1) define the incentives of politicians and interest groups to coalesce into political parties, (2) shape the structure of the party system that emerges, and (3) encourage the parties to establish and reinforce non-median coalitions.

1.2.1   The Party Coalition

Most modern theories of political parties begin with the assumption that parties are groups that attempt to control government by winning elections to public office (Downs 1957, Mayhew 1974, Schlesinger 1984, Rohde 1991, Cox & McCubbins 1993, Aldrich 1995). The chief implication of this definition is that party politicians are primarily reelection-minded. While politicians and parties may have policy goals, these goals are at least secondary to, if not determined by, the electoral constraint. Given this condition, the ability of parties to capture government and advance their agendas is heavily contingent on the institutions that govern elections. In the American context, the institutions that govern Congressional elections are nearly universally thought to favor candidate-centered over party-centered elections, leaving party organizations with only a service-oriented role (Herrnson 2009). Single member districts give Congressmen the ability to develop a personal vote using distributive politics. Open, local primaries prevent parties from directly controlling candidate selection. Campaign finance laws

limit partisan aid to candidates and empower candidates to develop large personal campaign treasuries. Each of these forces systematically discourages parties from exercising control over electoral outcomes, and disadvantages party organizations in their quest for party cohesion. As a result, American political parties are generally considered only loosely organized, and are thought to lack the capacity to effectively advance positive agendas.

The Schlesinger Model

Schlesinger (1984, 1991) lays out a theory of party organization that captures the interaction of electoral incentives and electoral institutions. He identifies three properties by which all organizations may be classified: whether they maintain themselves by market or non-market means, whether their output is a private or public good, and whether they compensate participants directly or indirectly. By his estimation, parties are market-based organizations (in that they compete against one another for votes) that produce public goods (in the form of public policy) and compensate participants indirectly (through the policy they deliver). For each of these properties, Schlesinger identifies organizational implications. First, he argues that market-based maintenance implies that electoral success is the only mechanism for party survival, and that individuals who are most successful at winning elections will have the most influence within the party. These implications reflect the candidate-centered nature of American elections.

Second, Schlesinger reasons that public good production and indirect compensation have implications for party activists and party candidates. Olson (1965) finds that the marginal benefit of group participation must exceed the marginal cost in order for an individual to bear the costs of organization. Given that parties produce public goods that compensate members indirectly, the marginal benefit of participation in a political party is low. By Olson's calculation, individuals in this context should not participate without side payments. Assuming that side payments are illegal, Schlesinger concludes that the costs of organization will be born primarily by those with ambitions for higher office, for whom the marginal benefit of organization will be greatest. Party activists, however, must be drawn

from the leisure market. This implies first that parties must produce outputs that are acceptable to supporters, and second that parties must artificially inflate the marginal benefits of participation in order to retain support. Schlesinger argues that agents of political socialization overstate the importance of individual contributions, giving supporters with limited information the impression that marginal benefits are high. This information asymmetry creates a class of political activists. Taking the logic one step further, Schlesinger argues that activists will ultimately resolve this asymmetry and return to leisure activity, implying that turnover in party activists should be very high.

The more general implication that Schlesinger draws concerns party organizational strength. Given that electoral institutions are candidate-centered, and that candidates bear the costs of party organization, candidates should only invest in organization to the extent that it is electorally useful. Party organization, he claims, becomes more potent when elections are competitive. When both parties have a reasonable chance of electoral victory, greater resources will be necessary to compete, thus larger and more sophisticated organizations will emerge to deliver those resources. In making this point, Schlesinger (1985) draws on V.O. Keys (1949) examination of southern politics. In the Jim Crow era South, the Democratic Party had a virtual stranglehold over political offices. The party maintained only the skeletal organizations necessary to control local nominating procedures and keep civil rights reformers off the ballots. In this environment, the Republicans had little hope of winning elections, and thus little incentive to organize. However, when the Northern Democrats in Congress passed the Civil Rights Act of 1965, Southern Democrats became disillusioned. The Republican Party then had an incentive to organize this opposition, which it did, drawing response from the Democratic Party. The net effect of increased competition was more sophisticated organization, and a realignment of southern whites to the Republican Party (Schlesinger 1985, Schlesinger 1991).

Schlesinger's model is powerful in that it gathers together most of the received wisdom from theories of parties and party organizations, and derives a comprehensive list of assumptions and implications. This provides a useful analytical

starting point for a more nuanced discussion of parties and party organizations. By modifying some of Schlesinger's key assumptions, and relaxing others, I will attempt to show that competitive electoral environments do not solely drive a partys incentives and ability to organize. I will provide the framework for an elite-driven model of party organization, in which party leaders invest in organization that develops and maintains non-median coalitions, and seek to win elections not by increasing competitiveness over median voters, but rather by mobilizing core supporters.

Party Competition as Product Differentiation

I begin with Schlesinger's first claim: that parties maintain themselves through market-based means. Schlesinger argues that party survival, and the survival of party leaders depends on their ability to pass the electoral test; that is, to win elections. They do this by offering competing slates of public goods and services to voters. The party that offers the more appealing slate should win, and parties that do not should fail. This claim, however, rests on the assumption that the market for political parties is competitive, and that failing parties will be replaced. Given the relatively permanent status of the Republican and Democratic Parties as fixtures of the electoral landscape, it is unclear that these parties are accountable to the voters for their existence, as Schlesinger suggests. High barriers to entry for new parties mean that voters do not generally have a feasible third option at the voting booth, and thus are forced to choose between the two parties, or forego their vote altogether (Duverger 1954, Cox 1997). When competition is imperfect, and barriers to entry for new actors are high, as in the American party system, the parties can choose to avoid direct competition. Instead of offering policy platforms that directly compete for median voters, the parties can pursue strategies of product differentiation by offering platforms that cater to and motivate target constituencies, ignoring the moderate positions that the median voter theorem (Black 1948, Downs 1957) suggests parties should pursue.

Exploiting the benefits of product differentiation requires sophisticated use of advertising and branding to craft and sell the party product. Coordinating this

kind of activity across a broad national party, in turn, requires the development of sophisticated party organizations. Existing research provides substantial evidence both that party organizations have developed this type of sophistication (Herrnson 2002, Dulio & Garrett 2007), and that the parties use their organizational capacity to conduct highly-ideological campaigns (Jacobson 2006) that are focused primarily on encouraging participation among core ideological supporters, rather than voters with median policy positions (Holbrook & McClurg 2005, Stonecash 2007). Many authors have concluded that these divisive strategies have driven a wedge between segments of the electorate, resulting in high levels of observed partisan polarization among voters, donors, and activists (Fiorina, Abrams & Pope 2005, Jacobson 2006, McCarty, Poole & Rosenthal 2007, Bonica 2012). These are not the actions of political parties operating in a competitive policy market.

The Roles of Activists, Donors, and Interest Groups

Schlesinger's second claim is that parties receive private benefits in exchange for public goods. This claim is fairly straightforward, but the implications he draws from it are less obvious. In his model, parties are solely composed of office-seekers, who bear the costs of organization in exchange for the benefits of office holding. The parties get support by recruiting activists from the leisure market. Lacking side-payments to offer activists, the parties are reduced to exploiting information asymmetries regarding the costs and benefits of political participation to inspire the short-term participation of their supporters.

Some more recent theories of political parties have questioned the exclusion of party activists from the definition of party. Aldrich (1995), for example, argues that the influence of party activists provides parties with a basis for their issue locations. He notes that activists are often those on the extremes of the political spectrum who feel the most passionate about political outcomes. This interest, in contrast with Schlesinger, is not driven by a distorted conception of the costs and benefits of participation, but from a genuine interest in effecting political change. Passionate activists, like candidates, thus have an incentive to bear the costs of organization. In accordance with Schlesinger, activists in Aldrich's theory

are motivated by the policy outcomes they receive and not by private benefits. However, the politicians, realizing the importance of activists in organizing and delivering electoral victories, adopt policy platforms that make concessions to the activists, in an effort to retain their services. Aldrich also shows that the inclusion of activists causes policy divergence between political parties even under conditions where the median voter theorem would predict convergence.

At its heart, Aldrich's argument is still based in cost/benefit analyses applied to collective action problems by Olson (1965). Activists bear the cost of party organization, but only because politicians, once elected, grant them policy concessions. If the costs of organization were exceedingly high, activists would require either greater policy concessions, or greater passion for politics, to continue their activities. Studies of American politics have shown that a series of historical trends collaborated to reduce the costs of political participation, providing an expanded class of activists with both the time and money necessary to participate in politics. The decreased marginal costs of participation gives activists the incentive to organize even when potential benefits, in the form of policy concessions, are very low.

James Q. Wilson (1966) describes the first historical trend: the amateurization of politics. Wilson explains how Progressive-era reforms removed the patronage mechanisms by which successful parties rewarded their supporters. Schlesinger (1984) recognizes one implication of these reforms: that parties were therefore required to compensate their supporters indirectly. However, Wilson draws a sharp distinction between the professional partisans who supported the parties in exchange for patronage, and the amateur partisans who offer their support in exchange for policy. While professional supporters depended on party success for their continued livelihood, amateur supporters are motivated by personal political interests that are not contingent on party success. As a result, modern party activists have greater freedom more extreme political ends, and invest in the organizational structures that will achieve them.

McCarty, Poole, and Rosenthal (1997, 2007) explore the implications of a second historical trend; since the 1940s, real per capita GDP in the United States

has more than tripled. As American society became more affluent, Americans could afford more leisure time, effectively reducing the marginal value of leisure. When performing a cost/benefit analysis on the value of political activism, this had the net effect of reducing the opportunity costs of pursuing political organization. Activists could pursue political goals while retaining leisure time. The interactive effect of increased wealth with the amateurization of politics, according to McCarty et al., was the proliferation of interest group politics in the United States. Fiorina et al. (2005) further argue that the amateurization of politics, and the subsequent rise of extreme political activists, has greatly contributed to the polarization of American political parties.

While some interest groups became members of party coalitions in Congress, others developed into powerful national organizations (NGOs, PACs, etc.), with the ability to command small armies of activists. These groups seek to influence party activity by offering their organizational capacity, fundraising abilities, and other services in exchange for favorable policy. The parties in government, recognizing the electoral value of such groups, seek to incorporate them into their national coalitions. Bawn et al. (2012) argue that national interest groups must be included in theories of political parties, because, like activists, they pull party policies away from the national median, and encourage partisan divergence.

Thus far I have suggested two major theoretical modifications to Schlesinger's original theory. First, I have argued that parties do not compete in a market for public office, but rather in a duopoly. Consequentially, parties have an incentive to pursue strategies of product differentiation, and mobilize target audiences instead of creating policy platforms with wide appeal. Second, I have argued and provided evidence for the inclusion of activists, and interest groups, along with politicians, in the party model. The task now is to provide a plausible argument for the interaction of activists and politicians. Aldrich's (1995) model includes activists, but assumes that they are partisan activists. One of the principle findings of Wilson (1966) and McCarty et al. (2007), however is that amateur activists are free to develop independent issue positions. Though activists have incentives to bear organizational costs, these investments would logically be targeted to pursue

independent, not necessarily partisan, ends. The proliferation of interest groups throughout the 1970s demonstrates this fact (McCarty, Poole & Rosenthal 2007).

In order to accomplish their goals, interest groups need to capture seats in government, which necessitates working within the two-party duopoly. The fragmentation of interest groups and the constraints of campaign finance law mean that no single interest can effectively dominate a political party. A successful coalition of interest groups is essential. Coalition building among interest groups requires overcoming the same collective-action problems that the individuals forming the interest groups faced. These interest groups may vary widely, however, in policy preference, geographic location, and other key variables, making collective action extraordinarily difficult. In order for coalition building to take place, these interests need access to a forum that will reduce their transaction costs, and provide them a mechanism for arbitrating their differences.

Congress provided such a forum. While one interest could not dominate a national political party, many of them could effectively dominate Congressional districts and the largely disorganized local parties that were left in the wake of Progressive reforms. An interest group that cultivates a sympathetic voice in Congress has a seat at the bargaining table of a national party coalition, be it Republican or Democrat. The party in Congress, then, becomes the organizational structure by which interests overcome their collective action problems and negotiate the terms of their coalition (Rohde 1991, Cox & McCubbins 1993, Aldrich 1995). Once established, these party coalitions have an incentive to develop campaign organizations, which would deliver them the Congressional majorities necessary to impact public policy.

1.2.2 From Coalitions to Cartels

I have presented a theory of political parties that outlines the rules of the electoral game and provides incentives for party differentiation and the organization necessary to pursue it. Here I consider theories of legislative agenda control (Rohde 1991, Cox & McCubbins 1993, Cox & McCubbins 2005). These theories argue that the formal rules of Congress empower the majority party leaders

(an in particular the Speaker of the House) with negative agenda control rights. These powers allow the majority party to effectively silence the minority party, by keeping minority party policies from reaching the floor of the House (Cox & McCubbins 2005). I argue that majority party leaders have the incentive to use this power to support a product differentiation strategy, polarizing the floor of Congress and making party differences electorally relevant. I then discuss the limitations on agenda control imposed by party heterogeneity (Rohde 1991, Aldrich 1995, Aldrich & Rohde 2000), and argue that party leaders have an incentive to pursue greater discipline in order to wield more effective agenda control powers.

The Agenda Control Debate

Cox and McCubbins (1993, 2005) develop a powerful theory of party in government. They characterize the majority party in Congress as a *procedural cartel* that exploits the structure and rules of the House of Representatives to reduce the transaction costs of governing and maintain coalition unity. Cox and McCubbins (1993) describe the formal powers of majority party leadership, particularly the Speaker of the House, to reward the loyalty and punish the defection of party members. Cox and McCubbins (2005) describe the formal power of the majority party to control the plenary agenda of the House of Representatives, effectively controlling which bills emerge from committee, the terms under which bills are debated on the floor, and ultimately, which bills receive final passage votes. These powers allow the majority party leaders to prevent the minority party from introducing legislation that will divide the majority coalition.

The authors term this *negative agenda control.* Such power is crucial to coalitions with heterogeneous preferences. Given that the issue basis for party coalitions is somewhat arbitrary, there are a theoretically infinite number of floor coalitions that could occur. If the parties did not have a mechanism to manipulate the behavior of their members in Congress, or prevent divisive issues from reaching the floor of the House, coalition stability would break down as representatives pursued personal ends at the expense of party cohesion. Negative agenda control powers are critical to my theory because they allow the party leadership

a formal mechanism to control the electoral agenda even without significant party homogeneity.

In terms of policy impact, procedural cartels and negative agenda control allow members of the majority party to pass bills that reflect the policy preferences of coalition members instead of the policy preferences of the House as a whole. There is some debate, however, about whether or not party influence actually impacts voting on the floor. Krehbiel (1991, 1998), for example, argues that policy outcomes reflect the preference distributions of the floor, rather than of parties, and that policy concessions will be made to secure the votes of certain pivotal players the floor median and veto override points in House, and the filibuster override point in the Senate.

Arbitrating this dispute is made difficult because of the limited nature of Congressional roll-call data. Scaling techniques, such as the DW-NOMINATE algorithm (Poole & Rosenthal 1984) score congressmen relative to one another based on their agreement on congressional roll-calls. Since the 1970s, DW-NOMINATE estimations have shown increasing divergence of the two parties along a single dimension (Poole 2005). Others point out, however, that this observation could imply either preference divergence among congressmen, or the influence of party leadership, or both (Snyder & Groseclose 2000, Smith 2000, Ansolabehere, Snyder & Stewart 2001*b*). A variety of empirical tests have been developed in an attempt to isolate the influence of party (Snyder & Groseclose 2000, Ansolabehere, Snyder & Stewart 2001*b*, Cox & Poole 2002, Cox & McCubbins 1993, Cox & McCubbins 2005). Two consistent findings emerge from these studies. First, they unanimously find that parties influence voting behavior even beyond what would be expected from simple preference divergence. Second, and unsurprisingly, they find that personal preferences do influence voting behavior, even in the presence of strong partisan influence. The fact that parties do not have total control over member voting behavior suggests that there are limitations to the party leaders agenda powers. The key theoretical insight in this case is the distinction between negative and *positive* agenda control.

Cox and McCubbins (2005) draw on the theory of *conditional party govern-*

ment developed by Rohde (1991) to explain the difference between negative and positive agenda control. Negative agenda control powers, of the kind described by procedural cartel theory, are afforded to the majority party by the structure of rules of the House of Representatives and are not dependent on any outside mechanisms that may enforce party discipline. These powers are negative in that they empower the party leadership with veto rights, or the ability to keep divisive issues off the agenda. Negative agenda control is, by design, a blunt tool. Positive agenda control powers, on the other hand, involve proposal rights, or the ability to advance a specific policy agenda. According to conditional party government theory, proposal rights are contingent on preference homogeneity among party members.

The central logic of this claim is drawn from principal-agent theory. Proposal powers, unlike veto powers, must be delegated to party congressional leaders by the membership of the party caucus. In making this decision to delegate, party members face a tradeoff. Increasing the proposal powers of party leaders decreases the veto powers of the party members. In a heterogeneous party, party members value their veto powers, because they stand to suffer greater losses of utility if the leadership advances certain agendas, especially if this utility loss has electoral consequences. In such situations, Aldrich and Rohde (2001) predict that proposal rights will be minimal, and the leadership will be limited to negative agenda control. In a homogeneous party, conversely, the risk of utility loss is comparatively small, and the potential gains from advancing a positive policy agenda are markedly increased. Thus, members will delegate increased proposal powers to the leadership, effectively weakening their veto powers, but allowing for the advancement of more programmatic policy (Aldrich & Rohde 2001).

The Electoral Relevance of Agenda Control

Once a party coalition has secured a legislative majority, the formal rules of Congress empower party leaders with negative agenda control. This allows the party leadership the ability to restrict the activity of the minority party, and prevent dissenters within the majority from exposing divisions in the party coalition. Setting the policy agenda in this fashion not only protects the party brand

from weaknesses, but also sets the electoral agenda, ensuring that elections will be fought based on issues of party strength. The bluntness of negative agenda control, however, limits the ability of the party leadership in Congress to coordinate its activity with election-minded party organizations. Party leaders, both in Congress and in the party organizations, thus have the incentive to pursue preference homogeneity within the party caucus in order to procure more substantial positive agenda control power. Increasing positive agenda control power gives the congressional leadership more precise control over the policy outputs of Congress, allowing the congressional party to implement policies that reinforce the party brand and synchronize with the electoral activities of the party organizations.

Understanding the relationship between the party organizations and the party in government has become more crucial over the past three decades primarily because party organizations have surged in power, integration, and complexity over that time period. The overall effect of this organizational surge, I argue, has been to consolidate the power of national committees by making them the central clearinghouse for the funding, information, and networking contacts necessary to win campaigns. As candidates and state party organizations become more dependent on national party services for their electoral success, the national party organizations should become increasingly able to influence candidate behavior and pursue national campaign strategies that enhance the party's positive agenda prospects, while simultaneously protecting the party brand.

1.2.3 Summary

In this section, I have outlined a theory of political parties and party organizations. I began with a simple theory of party organization proposed by Schlesinger (1984), and proceeded to enrich it with principles adopted from more recent theories of party formation and legislative organization, as well as insights derived from my own study of the literature. I argue that current theories of party organizations are inadequate because they fail to consider the strategic incentive of party organizations to pursue greater preference homogeneity among their congressmen.

2 Partisanship in Campaign Finance Networks

Studies of campaign finance in United States federal elections have primarily focused on identifying the conditions under which campaigns receive money from various actors, how much money they receive, when they receive it, how these contributions impact the outcomes of elections, and the extent to which they influence the behavior of elected officials. These studies are generally conducted using aggregate data on contributions to campaigns over the course of an election cycle from particular sources, with particular attention to the actions of party organizations, individual contributors, and political action committees.

The Federal Election Commission (FEC) maintains a comprehensive database of contributions data for these actors, both aggregated and itemized, for each federal electoral cycle from 1979-80 to the present, making large-scale longitudinal analysis possible. Still, the majority of analyses have concentrated on small subsets of the available data, often limited to particular election cycles, particular actors, and aggregated rather than itemized contributions data. As such, we know a great deal less than we might about the overall structure of campaign contributions in federal elections. In particular, we know little about how this structure has evolved and how it influences or is influenced by, for example, changes in political institutions, partisan control of government, campaign finance laws, and partisan polarization. The increasingly popular field of network science, however, provides us with appropriate tools to analyze the structure of itemized FEC contributions data, visualize and measure changes in this structure over time, and estimate the influence of structural change on variables of interest.

In this chapter, I begin by using itemized FEC contributions data to build and analyze networks of campaign finance activity in United States federal elections. I assemble two types of network for each two-year federal electoral cycle from 1980 to 2010. In the first type, which I refer to as *direct connection* or DCON networks, the sets of actors (*nodes* or *vertices* in the parlance of network science) consist of political committees registered with the FEC, including party organizational committees, political action committees (PACs), and the principal campaign committees of House candidates. These nodes are connected to one another by *links* or *edges*, which represent the presence of a financial exchange between committees. The edges are weighted by the amount of money transferred. In the second type, which I refer to as *shared individual donor* or SID networks, the sets of actors (nodes) are the same as in the DCON networks, and an undirected edge is drawn between two nodes if those two nodes have at least one individual donor in common. The edges in the SID networks are weighted by the total amount of money that two nodes receive from shared individual donors. Section 2.2 describes the data collection and network assembly processes in detail, while Section 2.3 provides useful descriptive statistics about the networks themselves.

Having assembled and described the campaign finance networks, I next employ a series of algorithms to partition the nodes of each network into discrete communities based on their patterns of connection. Though the community detection algorithms vary in their approaches to partitioning nodes into communities, they all seek to find a partition that maximizes a network science statistic called *modularity* (Newman & Girvan 2004, Newman 2006*b*). Modularity measures the quality of a community partition for a given network by comparing the number and weight of edges that occur within a community to the number and weight of edges that occur between communities. Modularity increases as the ratio of in-community to between-community edges increases. The community partition that maximizes modularity, therefore, gives us the network structure that best divides the nodes based on their contribution activity. Compared to colloquial definitions of community, this measure makes intuitive sense. Communities are routinely defined based on shared behavior. In this case that behavior is a politi-

cal contribution. The modularity statistic not only allows us to locate community structures within electoral cycles, but also allows us to compare the strength of community divisions across electoral cycles. This gives us the opportunity to analyze the conditions under which communities of donors coalesce, when they break down, and how these changes are associated with important political variables. Section 2.4 describes the community detection procedure and offers a basic outline of the resulting community structures.

Though these networks and their revealed community partitions have many potential scholarly uses, in this chapter I focus primarily on the relationship between community structure, modularity, and partisanship. Examining the partisan composition of the revealed communities, I demonstrate that political party has played a large and increasing role in the separation of donors, candidates, and committees into distinct campaign finance communities, with potentially important implications for the ability of parties and party organizations to coordinate on political agendas, both positive and negative, in the halls of Congress.

2.1   Background

Despite considerable interest in the study of campaign contributions, very little work has been done concerning the community structure of donations in federal elections. Some attention, however, has been paid to the relationship between campaign contributions and partisan polarization.

One branch of research concerns the contribution behavior of political action committees. PACs have been shown to spend money primarily on incumbent candidates, and candidates who have held seats on committees relevant to their business (Herrnson 2004, Jacobson 2004). Despite this regularity, there is some evidence that PACs have ideological leanings, or at least act as if they do. Poole and Romer (1985, 1987), for example, demonstrate that PAC contributions to Congressional races can be explained with a spatial model, and that PACs rarely donate to candidates who occupy opposite extremes of the political spectrum. Similarly, Bonica (2012) uses a spatial model to define ideal points for individual

donors using the same individual-level FEC data employed in this paper, and finds that individuals have exhibited increasingly polarized donation patterns.

A second branch concerns the contributions of party organizations to Congressional candidates. Numerous studies have shown that parties distribute funds based on the perceived competitiveness of campaigns, with an eye towards maximizing seat shares in Congress, and that comparatively little attention is paid to party loyalty (Jacobson 1985-1986, Herrnson 1989, Damore & Hansford 1999). There is some evidence that the Democratic Party has used campaign funding as a reward for loyalty (Leyden & Borreli 1990). However, no clear relationship has been established between party funding and future loyalty in voting (Cantor & Herrnson 1997).

Generally speaking, the connections between campaign contributions and partisan polarization remain difficult to establish empirically. With the use of community detection algorithms on FEC contribution data, however, we are able to measure the strength of community divisions within contribution networks, and chart the development of these divisions and their strength over time. Community detection algorithms have previously been employed in the study of committees (Porter, Mucha, Newman & Warmbrand 2005, Porter, Mucha, Newman & Friend 2007), cosponsorships (Zhang, Friend, Traud, Porter, Fowler & Mucha 2008) and roll-call voting in Congress (Waugh, Pei, Fowler, Mucha & Porter 2011). In each set of Congressional data, the authors found evidence of increased partisan polarization over time.

2.2   Network Assembly

In this section, I describe the process by which I assembled the direct connections (DCON) and shared individual donor (SID) networks. The DCON networks were built using data sets of itemized transactions between political committees registered with the FEC, while the SID networks were built using data sets of itemized contributions from individual donors to political committees. Taken together, these networks provide a nearly complete picture of federally disclosed

campaign finance activity in United States federal elections for each election year from 1980 to 2010.

2.2.1 Direct Connection Networks

The raw FEC itemized records files required some processing before they could be assembled into campaign finance networks of direct connections. First, the itemized files contain records for all reported transactions during a given electoral cycle, but not all of those transactions pertain to the electoral cycle in question. In any given electoral cycle, for example, some candidates and committees from prior cycles are still receiving contributions and other forms of support to settle their campaign accounts. These transactions are included in the FEC record for the electoral cycle during which the transaction, but not necessarily the election, took place. For each electoral cycle, I consider only those transactions pertaining to that cycle's federal election. All transactions pertaining to previous or future electoral cycles are dropped.

Second, each itemized transaction is assigned one of 37 different "transaction type" codes by the FEC.[1] Many of these codes represent transactions that are of little theoretical interest to this project, such as those having to do with loans and loan repayments. As the primary interest of this project is the contribution of money and not the loaning of money, these transactions are excluded from my analyses.

Third, in addition to containing theoretically irrelevant transactions, the itemized records also double-count many transactions for the simple reason that political committees are required to document both incoming and outgoing transactions. For example, say a PAC sends a contribution to a House candidate. The PAC would report the contribution as "24K - Contribution Made to Non-Affiliated," while the the candidate's campaign committee would report the contribution as "18K - Contribution Received from Registered Filer." The FEC itemized records file documents these as a separate transactions, even though they clearly are not. To avoid double-counting contributions when assembling the campaign

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[1]See http://www.fec.gov for the list of codes.

finance networks, I consider only transactions reported by contributors, and drop transactions reported by recipients.

After eliminating repeated and irrelevant transactions, I am left with six different transaction types from which to assemble the DCON networks. These transaction types, presented in Table 2.1, represent the wide variety of mechanisms that political committees have to express their monetary support for one another in federal elections. Coordinated expenditures (24C), independent expenditures (24E), communication costs (24F), and in-kind contributions (24Z) are included, representing the key support activities provided by political committees that do not register as regular contribution. The inclusion of these codes is necessary to capture the campaign activity of committees that are highly active in federal elections, but do not contribute directly to other committees. 'Super PACs,' which begin appearing in the 2009-2010 electoral cycle and are only permitted to engage in independent expenditures, are a prominent example of this type of group. Additionally, these codes capture the full extent of party organizational involvement in federal campaigns, as FEC limitations on independent, coordinated, and in-kind expenditures have always been separate from limitations on direct contributions. Cash contributions from one committee to another (24K), by far the most common type of transaction, are included as well. These contributions are subject to the familiar limits established by FECA and its amendments in the 1980s, and updated by the BCRA in 2002. Finally, transfers between affiliated committees (24G), primarily transfers between party organizational committees are included. Crucially, these transactions capture the flow of money within the party organizational network and are not subject to limitations by the FEC.

Using the processed itemized contributions files, I next generate an *edge list* for each DCON network. The edge list is a three column matrix with rows equal to the number of edges or links in the network. The first column contains the FEC ID codes for committees sending money, the second column contains the FEC ID codes for committees receiving money, and the third column contains the edge weight, which represents the total amount of money exchanged. It is important to note that the order of the columns is important in the DCON networks, because

Table 2.1: FEC transaction codes used in the construction of direct connection (top) shared individual donor (bottom) campaign finance networks.

Direct Connections	
Code	Description
24C	Coordinated Expenditure
24E	Independent Expenditure For
24F	Communication Cost For
24G	Transfer Out Affiliated
24K	Contribution Made to Non-Affiliated
24Z	In-Kind Contribution Made to Registered Filer

Shared Individual Donors	
Code	Description
10	Non-Federal Receipt from Persons
15	Contribution

they are *directed* networks. This means that any two committees, i and j, the presence of a connection from i to j does not necessarily imply a connection from j to i and vice versa. This makes intuitive sense, given that the DCON networks capture the transfer of funds from one committee to another.

The edge list is essentially a reduced form of the itemized contributions files. The itemized contributions files often contain multiple transfers between the same two committees. For example, a PAC may donate to a campaign committee in both the primary and the general election, or a party organization may contributed directly to a campaign committee as well as providing coordinated expenditures. While there is potentially information to be gained from leaving these transfers as separate links, this would result in a network with multiple links between committees, and, unfortunately, relatively few techniques have been developed to analyze networks with multiple links. Therefore, I have chosen to combine these duplicate edges and sum their weights, resulting in an edge list containing only unique edges. For any given edge, $i \rightarrow j$, the edge weight is equal to the sum total of all transfers from committee i to committee j in a given electoral cycle.

2.2.2 Shared Individual Donor Networks

The itemized individual contribution files available from the FEC also required processing before they could be used to construct the shared individual donor (SID) networks. As with the committee to committee contribution files

used to construct the DCON networks, the individual contribution files also contain a number of irrelevant FEC transaction types. Of the transaction types coded by the FEC in these files, only two deal with direct transfers of money from individuals to political committees. By far the most common transaction type is the 'contribution,' which involves an individual sending money to any political committee. These contributions are subject to the limits established by FECA and its amendments. The second transaction type, 'non-federal receipts from persons,' covers the 'soft' money donated to political party committees by individuals for the purpose of party building activities. These transactions were not subject to limits under the FECA, but were banned altogether by the BCRA in 2002, and are therefore only present in the data for electoral cycles from 1980-2002. The dropped transaction types included loans, honoraria, donations to inauguration ceremonies, and other miscellaneous transfers.

After removing irrelevant transaction types, I then need to identify the set of unique individual donors for each electoral cycle, and generate a list of the committees to which those individuals contributed money. In the DCON networks, this was a trivial task, as each committee is assigned a unique identification number by the FEC. Individual donors, however, are not given unique IDs by the FEC. Rather, each individual contribution is identified by the name, address, zip code, and occupation of the contributor. Many individuals donate to multiple candidates/committees and therefore appear multiple times in the itemized datasets. Unfortunately, irregularities in the coding of identifying variables make the generation of unique donor lists difficult. Recognizing that any identification process would contain errors, I elect to identify individuals first by clustering them according to their zip codes. This choice comes with the cost of registering individuals who change zip codes over the course of an electoral cycle as different individuals.

Within each zip code cluster, I then cluster individuals based on their names. Rather than matching the name variables precisely, I elected to use an approximate (fuzzy) matching procedure. In this procedure, implemented by the *adist* function in R, the difference between two character strings a and b is measured according to generalized Levenshtein distance, which is equivalent to the

number of character insertions, deletions, and substitutions necessary to trans-
form string a into string b. For example, if string a is "Waugh, Andrew," and
string b is "Waugh, Andrew S," the distance between a and b is 2, as converting
string a into string b requires adding two characters: a blank space and a letter 'S.'
In this study, I counted all transactions within each zip code cluster as belonging
to the same individual if the Levenshtein distance between the name strings was
less than or equal to 2. This choice also has its drawbacks, as donors within the
same zip code with very similar names are counted as the same individual for the
purposes of the study. The likelihood of these errors increases as the number of
itemized transactions within a given zip code increases. Given the available data,
however, any approach would encounter such tradeoffs. Having identified the set of
unique donors for each electoral cycle based on their zip codes and an approximate
matching of their names, I then assign each individual an unique ID code.

Subsequently, I generate an edge list for each electoral cycle representing the
connections between FEC committees based on the presence of shared individual
donors between them. This edge list is similar in format to the edge list generated
for the DCON networks. The first two columns of the edge list contain the IDs
for the committees who share an individual donor, and the third column contains
edge weight. In this case, the edge weight equals the sum total of donations coming
from shared individuals. Two details on this procedure warrant mentioning. First,
it is common for one individual to give different amounts of money to two different
committees. For example, one might donate $100 to the Republican National
Committee and $500 to the Democratic National Committee. In this scenario,
I take the smaller of the two donations (in this case $100) to be the weight of
the shared individual donation. Second, many committees are linked together by
many shared individual donors. For example, the RNC and DNC may both receive
contributions of varying amounts from, say, 50 donors. In such a case, I would
take the minimum of each pair of donations from each shared donor, following
the previous example, and proceed to sum those minimum values to yield the
total edge weight between the RNC and DNC. I also retain the total number of
shared donors as a separate variable for each edge, though these are not used in

the analyses presented here.

2.3   Descriptive Statistics

Having processed the itemized contributions data and assembled the DCON and SID edge lists for each election cycle, I now have the FEC data in a format that can be read into a data analysis package and analyzed as a network. In this study, most analyses are performed using the *igraph* package in R (Csardi & Nepusz 2006). In this section, I provide descriptive statistics for the networks. These statistics provide a general sense of the development of campaign finance activity over time and suggest a number of fruitful avenues for more detailed investigation.

2.3.1   Network-level Statistics

To begin my analyses of the campaign finance networks, I calculate several common network-level statistics. These statistics help paint a more complete picture of the size and connectivity of the networks under consideration. I first consider the most basic measures of the size and scope of the networks: the number of nodes, the number of edges, and the total weight of edges. Next, I examine several statistics associated with the level of connectivity in the networks: density, transitivity, and average path length. A summary of these measures is presented in Table 2.2.

Node Counts, Edge Counts, and Total Edge Weights

Let us turn our attention first to Figure 2.1, which contains time-series charts of the node counts, edge counts, and total edge weights for the DCON and SID networks. We can see from the top and middle panels of Figure 2.1 that both network types have become larger and have increased their number of edges over time. For the DCON networks, this implies that the number of committees raising and spending money in federal elections has increased over time. In the case of the SID networks, this finding implies both an increased

Table 2.2: Network-level statistics for Direct Connection and Shared Individual Donor networks.

	Direct Connections					Shared Individual Donors				
	Nodes	Edges	Dens.	Trans.	Av. Path	Nodes	Edges	Dens.	Trans.	Av. Path
1980	4182	53021	0.0030	0.012	3.3	2187	36672	0.0153	0.197	2.4
1982	4592	69244	0.0033	0.015	3.2	1939	32310	0.0172	0.241	2.6
1984	5200	86001	0.0032	0.021	3.2	2213	44992	0.0184	0.250	2.5
1986	5035	95068	0.0038	0.020	3.1	2135	49110	0.0216	0.281	2.5
1988	5331	107130	0.0038	0.022	3.1	2447	60516	0.0202	0.248	2.4
1990	4959	106514	0.0043	0.028	3.1	2582	76222	0.0229	0.301	2.5
1992	5500	118579	0.0039	0.025	3.0	3286	119684	0.0222	0.273	2.4
1994	5272	118160	0.0043	0.032	3.0	3107	118878	0.0246	0.295	2.5
1996	5409	130120	0.0044	0.043	3.0	3322	168786	0.0306	0.314	2.3
1998	5061	124043	0.0048	0.047	3.0	3042	133833	0.0289	0.326	2.4
2000	5304	132838	0.0047	0.054	3.0	3411	179660	0.0309	0.328	2.3
2002	5294	133036	0.0047	0.060	3.0	3404	167418	0.0289	0.335	2.4
2004	5662	139452	0.0044	0.064	3.0	3772	174342	0.0245	0.297	2.3
2006	5745	153507	0.0047	0.070	3.0	3971	222028	0.0282	0.340	2.4
2008	6209	162362	0.0042	0.059	3.0	4444	265561	0.0269	0.326	2.3
2010	6477	167420	0.0040	0.060	3.0	4575	289773	0.0277	0.354	2.4

number of committees receiving individual donations and an increase in the number of individuals donating to multiple political committees.

Curiously, the edge counts in the SID networks appear to be increasing at a much faster rate than the edge counts in the DCON networks, particularly in the period from 1990 to 2010. From 1992 onward, the SID networks contain a greater number of edges than the DCON networks, despite the fact that the DCON networks contain thousands more nodes than their SID counterparts. The increase in partisan competition for the Presidency and control of Congress over this period created the need for ever-expanding campaign coffers, leading parties and campaigns to develop increasingly sophisticated methodologies employed by parties and campaigns to target would-be donors and encourage them to contribute and participate in elections (Cho & Gimpel 2007, Holbrook & McClurg 2005). The increased number of nodes and edges in the SID networks are one likely result of such a process. This process has been aided, of course, by the rapid development in information technology over the past 20 years, which has made decreased participation costs both for donors and campaigns. On the Democratic side, for example, individual donor targeting efforts have been so successful that the DNC stopped accepting PAC contributions altogether after the 2008 election,
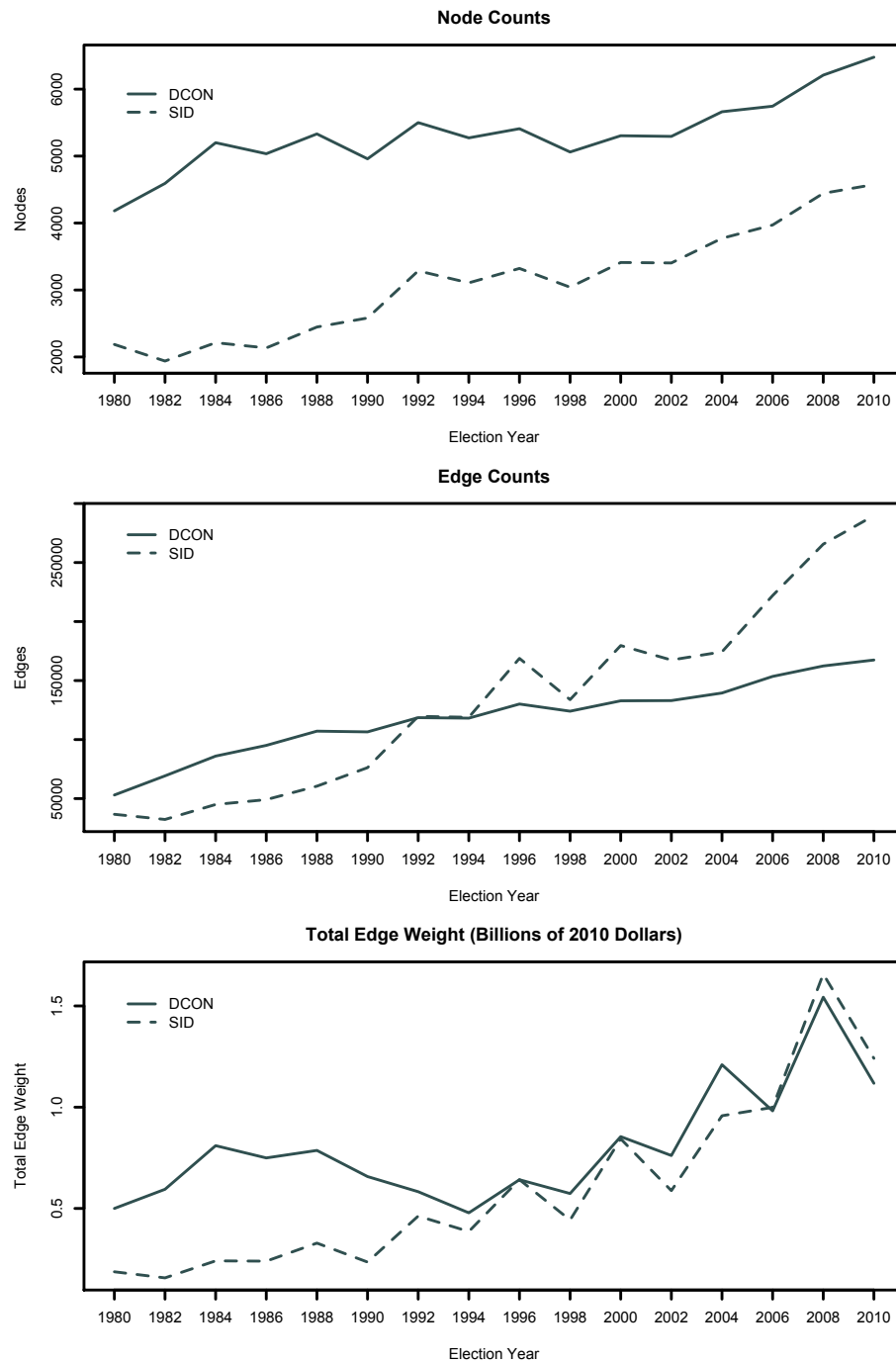
Figure 2.1: Node counts (top), edge counts (middle), and total edge weights (bottom) for Direct Connection and Shared Individual Donor networks.

choosing instead to rely entirely on individual contributions.

It is only logical that technological developments would increase the donation activity of individuals more than they would increase the activity of committees. The contact information for registered political committees is publicly disclosed and on file with the FEC, making it easily easily accessible to parties and campaigns. Furthermore, the political interests of these organizations are generally transparent, since political committees form for the express purpose of raising and spending money on federal elections, so parties and campaigns would have an easier time choosing committees from which to seek financial support. Locating individual donors and convincing them to contribute is a substantially more costly proposition. For these reasons, parties and campaigns have invested billions of dollars developing databases of voter metadata, allowing them to better understand which individuals to target and what messages will compel those individuals to contribute. To be sure, these targeting practices predate the widespread adoption of the Internet; the GOP, for example, was particularly successful targeting donors by mail using data on their consumption habits and memberships in conservative social organizations (Herrnson 2004, Ubertaccio 2007). However, it is unquestionable that the Internet, along with the immense body of metadata it generates, has enabled parties and campaigns to dramatically increase the scope and specificity of their targeting operations (Issenberg 2012), with increased SID network connectivity being a natural result.

A final interesting feature of Figure 2.1 is the relationship between the total edge weights of the SID and DCON networks shown in the bottom panel. For the period from 1980 to 1992, the two time series are uncorrelated, with a correlation coefficient, 0.092, that is not significantly different from zero ($p > 0.8$). From 1994 onward, however, the time series are nearly perfectly correlated, with a correlation coefficient of 0.957 ($p < 0.0001$). The lack of correlation between the total edge weights of the DCON and SID networks from 1980 to 1992 implies that the amount of money passed back and forth between political committees, as represented by direct connections networks, was unrelated to either the frequency of individuals donating to multiple committees, or to the amount of such multiple donations, as

would be captured by the shared individual donor networks. This finding integrates nicely with the narrative that emerged from inspection of the node and edge count time series.

In the absence of partisan competition over the Presidency or majority status in Congress, two things are likely to be true. First, many individual donors, knowing that a change in party control of a major institution is unlikely, would have little incentive to contribute money to multiple campaigns, as these contributions would not be likely to influence the balance of party power. Activists and ideologues may still have such an incentive, but it stands to reason that lack of competition would depress the aggregate frequency of donations to multiple committees, which would depress the total edge weight of the SID network for that electoral cycle. Second, even if individual donors in a non-competitive situation might be persuaded to donate to multiple committees, neither party would have an incentive to pay the cost to persuade them, knowing that even an immense amount of effort might be insufficient to alter the institutional balance of power.

Under high levels of competition, however, both of these rationales change. Parties know that relatively small increases in campaign fundraising may make a substantial difference, and individual donors can more easily see the strategic complementarity of donating to multiple campaigns. Advances in information technology compound these effects for both individuals and political committees. Using social media, websites, e-mail, and other methods, political committees can easily suggest other committees worthy of individual donations, while individuals have easy access to information helping them to target their contributions. This potentially explains the increase in the edge weights of the SID networks after 1992. The increase in DCON network edge weights can be similarly explained: not only do political committees have an incentive to spend more money in pursuit of a shift in the party balance, they have access to more money as the pool of individual donations expands, fueling their budgets. To the extent that competition drives the need for increasing campaign budgets, it compels political committees to locate new individual donors and encourage them to donate to multiple committees, driving up the edge weights in both the SID and DCON networks, and effecting a strong

correlation between the two measures.

Density, Transitivity, and Average Path Length

Next, let us consider Figure 2.2, which presents time series of density, transitivity, and average path length for the SID and DCON networks. These plots reinforce and expand the narrative that emerges from inspection of Figure 2.1. I begin by defining the measures under consideration and then proceed to discuss the significance of the empirical results.

Density, pictured in the top panel of Figure 2.2, is a summary measure that captures the interaction between the number of nodes, n, and the number of edges, e, in a given network. It is calculated by dividing the number of edges in the network by the number of possible edges. In the undirected SID networks, density equals $\frac{2e}{n(n-1)}$, while in the directed DCON networks, density equals $\frac{e}{n(n-1)}$. The density measure ranges from 0 to 1, with 0 representing an *empty* network with no edges, and 1 representing a *complete* network with every possible edge present.

Transitivity, presented in the middle panel of Figure 2.2, attempts to capture the degree to which sets of nodes in a network tend to cluster together (Wasserman & Faust 1994). Transitivity is typically calculated by examining the population of *triples* in a network. A triple is any set of three nodes, $\{i, j, k\}$, in a network that are connected by edges. In an undirected network, two types of triples are possible: open and closed.[2] In an open triple, three nodes are connected by only two edges, for example, $i \leftrightarrow j$ and $i \leftrightarrow k$. In this example, the triple is connected in the sense that we can draw a path of edges from j to k through node i, or $j \leftrightarrow i \leftrightarrow k$. This triple is *open* because nodes j and k are not directly connected. Adding the edge $j \leftrightarrow k$ *closes* the gap between j and k, transforming the group into a closed triple. A transitive network is one in which the number of closed triples is high relative to the number of open triples. At the triad level, this means that the presence of edges $i \leftrightarrow j$ and $i \leftrightarrow k$ strongly implies the existence of edge $j \leftrightarrow k$. Thus, transitivity is calculated by counting the number of closed

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[2]Edges in the DCON networks are considered undirected for the purposes of calculating transitivity.

triples in a network and dividing this by the total number of triples.

Average path length, presented in the bottom panel of Figure 2.2, measures the extent to which pairs of nodes tend to be closely or distantly connected to one another. A *path* is said to exist between two nodes i and j if they are connected by a series of edges and intermediate nodes. For example, if the edge $i \leftrightarrow j$ exists, then the path length between i and j is equal to 1. However, if i and j are not directly connected, but both nodes are connected to a third node, l, we see that an indirect path, $i \leftrightarrow l \leftrightarrow j$, connects i and j. As this path involves two edges, the path length is equal to 2. The path length between any pair of connected nodes may be calculated in similar fashion, and the average path length for a network is equal to the sum of these path lengths divided by the total number of paths. As the number of edges in a network grows, shorter paths may be drawn between pairs of nodes, and the average path length decreases. Smaller average path lengths are therefore associated with more connected networks.

Looking at Figure 2.2, it is immediately apparent that there are large differences in density, transitivity, and average path length between the SID and DCON networks. These differences, however, are largely attributable to structural differences between the two network types. The disparity in density levels, for example, is partially attributable to the fact that the DCON networks are directed, while the SID networks are not. This means there are twice as many possible edges in the DCON networks, so each additional edge counts for less. Furthermore, while it is theoretically possible for every possible edge to be present in a DCON network, many edges are not very likely. We expect, for example, many edges representing transfers of money from corporate PACs to congressional campaigns, because corporate PACs are a key source of funding for the candidates. However, we do not expect to see congressional campaigns donating money to corporate PACs with any great frequency. This expectation is borne out empirically in 2010 DCON network, where we observe 32,797 edges from corporate PACs to the campaigns of incumbent House members but only 12 edges going in the other direction. This has the effect of suppressing the density level of the DCON networks.

Transitivity and average path length are impacted in similar fashion. In the
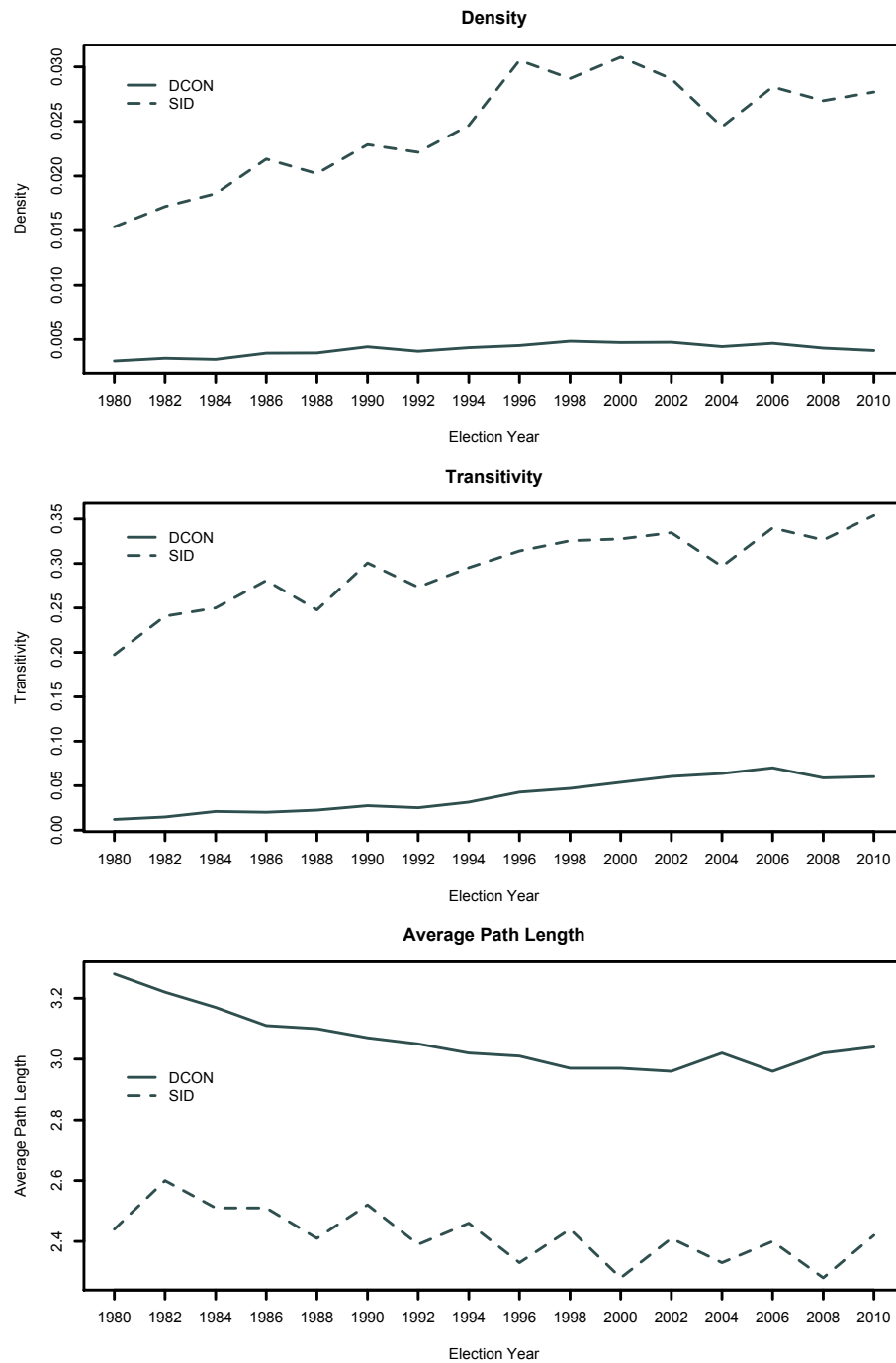
Figure 2.2: Network density (top), transitivity (middle), and average path lengths (bottom) for Direct Connection and Shared Individual Donor networks.

DCON networks, we expect to see a great many open triples, as most edges go from PAC donors to party and campaign committees. Many PACs are thus connected to one another through their common donation targets. In order for these open triples to become closed triples and thereby drive up transitivity scores, we would have to observe an increase in edges directly connecting PAC donors. For a number of PAC classes, particularly corporate PACs, such connections are unlikely to form, as these PACs have no obvious strategic interest in exchanging funds that could otherwise be spent on contributions to campaigns or party organizations. Thus, these PACs are unlikely to be involved in closed triples, and their path lengths are not likely to drop below 2, keeping transitivity scores low and average path lengths high.

Despite the large difference in density, transitivity, and average path length between the two network types, we can see from Table 2.2 that the measures follow similar trends across network types. The two density measures, for example, have a correlation coefficient of 0.915 ($p < 0.0001$) level, while transitivity and average path length have correlation coefficients of 0.864 ($p < 0.0001$) and 0.577 ($p < 0.05$), respectively. Generally speaking, density and transitivity are increasing over time, while average path lengths are decreasing. These findings are consistent with the narrative of increasing competition and technological capacity described in the previous section. In several of the Figure 2.2 time series, however, we see the general trends interrupted during the 2004 electoral cycle. In the DCON networks, we observe a sizable drop in density and a spike in average path length, while in the SID networks we see large drops in density and transitivity. These developments are notable because they take place during first electoral cycle following a major shift in campaign finance law: the Bipartisan Campaign Reform Act (BCRA). Changes in these time series provide valuable insights into the effects of reform and suggest new lines of inquiry to be pursued using micro-level data.

The BCRA, which banned 'soft money' contributions from individuals to political parties, became law in 2002 and took effect starting with the 2004 electoral cycle. Soft money contributions were not subject to limits from the FEC, but they also could not be spent directly on federal elections. They could, however,

be used by party committees for 'party building' activities such as voter identi-
fication, polling, and organizational overhead. In the pre-BCRA era, soft money
had been considered a crucial source of funding for party organizations, and there
was widespread concern that eliminating this funding source would cripple party
organizations, factionalize partisans, and further polarize the electorate, particu-
larly in Presidential election years (La Raja 2008). Though there has been no
clear evidence yet that party organizations have been crippled, analyses of 527 and
501(c)3 groups, which proliferated after BCRA took effect and are able to receive
unlimited donations, suggest that a good deal of factionalization has occurred,
particularly among Republicans (Koger, Masket & Noel 2010), a finding which is
corroborated by my analyses in Section 2.4. Without the ability to raise large lump
sums from wealthy donors, parties have adapted by relying more on contributions
from incumbent congressmen (Larson 2004) and by redoubling their efforts to ex-
pand hard money receipts from PACs and individuals (Dwyre, Heberlig, Kolodny
& Larson 2007).

The drop in density in the SID and DCON networks in 2004, provides
some evidence of party adaptation to the new institutional environment imposed
by BCRA. Two pieces of information are relevant. First, we know that parties
had been using soft money for the purpose of locating and mobilizing supporters,
including donors (Ansolabehere & Snyder 2000). Second, we have evidence that the
intensity of party competition, in combination with technological advancements,
had been driving the parties to expand the size and connectivity of their donor
networks since approximately 1992. When BCRA took effect in 2004, the need
to expand donor networks remained pressing, with a competitive Presidential race
and slim party majorities in both chambers of Congress, but party capacity to
fund donor targeting efforts had been greatly diminished by the elimination of soft
money. In the DCON and SID networks we observe increases in the numbers of
nodes and edges compared to 2002, but the number of nodes increased at a faster
rate than the number of edges, resulting in decreased density in both networks.

Following this narrative, we suspect that committees in the DCON network
sent money to fewer other committees, and individual donors in the SID network

contributed to fewer committees. In both cases, we should therefore also expect to observe an increase in average path lengths. We see clear evidence in Figure 2.4 of such an increase in the 2004 DCON networks. In the SID networks, we observe a *decrease* in average path length as compared to 2002. However, it is plain that this measure cycles over time, with average path length increasing in midterm election years and decreasing in presidential election years. This is not surprising, given that individual participation rates are known to be substantially higher in presidential years, which would have the effect of creating more strongly connected SID networks for those electoral cycles. If we consider the midterm and presidential year time trends separately, we see that average path length declined in every presidential election year from 1984 (2.51) to 2000 (2.28). As suspected, 2004 interrupts this trend, as average path length increases to 2.33, a significant increase over 2000 ($p < 2.2e^{-16}$). This evidence suggests that both campaign finance networks became less efficient in 2004.

Decreased efficiency is consistent with an environment in which party organizations, having lost some of their capacity to locate donors and coordinate contributions due to BCRA, are forced to rely more on 'unaffiliated' PACs to perform their organizational tasks, as opposed to state party organizations. As it happens, the 2004 election takes place in the middle of a two-decade-long explosion in the population of unaffiliated PACs, a phenomenon which I discuss in detail in Section 2.3.2. In shifting the organizational burden from state committees to unaffiliated PACs, the national parties lose a great deal of formal control. Under the BCRA as under FECA, national parties are permitted to transfer unlimited amounts of money to their state affiliates, which gives them a considerable mechanism by which to induce cooperation. When contributing to unaffiliated PACs, however, the national parties are subject to regular contribution limits and therefore have little capacity to control unaffiliated PAC behavior.

Effectively, this scenario increases the number of actors with veto power over some part of party fundraising strategy, increasing the potential for coordination failures and reducing efficiency as a byproduct (Olson 1965, Tsebelis 2002). As a practical example, suppose that in 2002 the RNC tasked each of its state sub-

sidiaries with developing a list of potential donors. Under the pre-BCRA rules, the RNC, presuming it had access to enough soft money, could provide funds both to develop the lists and to facilitate the dissemination of the lists to relevant campaign committees. The state committees, not having to fund the activity themselves, and expecting to benefit from the new lists, would have every incentive to cooperate. Now suppose that in 2004 the RNC seeks to accomplish the same task, only this time using unaffiliated PACs as agents instead of the state committees. Unlike the 2002 case, the RNC could not simply fund the development of the lists, nor could it compel the unaffiliated PACs to share the lists with its affiliate organizations and campaign committees. In such a situation, the party could not hope to efficiently utilize its donor base. In aggregate, the likely result would be a decrease in the number of unique campaign committees supported by each donor, which would manifest itself in the campaign finance networks as a decrease in density and an increase in average path length, both of which we observe in Figure 2.2.

The example provided above also provides a potential explanation for the final piece of the 2004 puzzle: the DCON networks continue to exhibit increased transitivity, while the SID networks show a substantial decrease. In the SID case, this finding is inherent in the design of the network. For example, if an individual donor contributes money to three different committees, a, b, and c, then by definition these nodes each share an individual donor. This implies that edges $a \leftrightarrow b$, $a \leftrightarrow c$, and $b \leftrightarrow c$ all exist, and that the set $\{a, b, c\}$ is a closed triple. If the same individual donor also donates to a fourth committee, d, this would imply the existence of additional closed triples $\{d, a, b\}$, $\{d, a, c\}$, and $\{d, b, c\}$. Thus, the number of closed triples increases in nonlinear fashion as individuals add unique committees to their contribution portfolios. Correspondingly, when individual donors decrease their unique committee contributions, the number of close triples drops in nonlinear fashion, exerting strong downward pressure on the global transitivity score. To the extent that organizational inefficiency negatively impacts individuals' unique contributions, we therefore should observe reduced transitivity in the SID networks.

In the DCON case, the continued rise in transitivity from 2002 to 2004 can

be explained by an increase in the number of unaffiliated PAC nodes combined with an increased willingness on the part of campaign and party committees to employ them as fundraising allies. As unaffiliated PACs tend to be more ideological and partisan compared to affiliated PACs, we expect them to be less concerned with individual policy outcomes and more concerned with assisting their party allies in controlling Congressional majorities and winning Presidential elections (Herrnson 2009). Whereas a corporate PAC may be able to exert policy influence by targeting key incumbents on relevant committees, the goals of unaffiliated PACs necessitate the formation of broad coalitions, implying that unaffiliated PACs would need to contribute to a greater number of campaign committees. Additionally, because control of Congress is determined on a partisan basis, unaffiliated PACs have a clear incentive to contribute to ideologically-similar party committees. Thus, unaffiliated PACs have an incentive to form triples in combination with party and campaign committees. These triples are highly likely to be closed triples, as party committees, obviously, are frequent contributors to campaign committees. Indeed, triangular alliances between unaffiliated PACs, party committees, and campaign committees are precisely what we would expect to observe in a competitive electoral environment. As the number of these triples increases, DCON transitivity likewise increases.

It is clear from the DCON transitivity time series that the drive toward increased clustering began long prior to the passage of BCRA and is likely associated with increased partisan competition in the late 1980s and early 1990s. As discussed in Section 2.3.2, the proliferation of unaffiliated PACs also has its origins in this era. There is no reason to suspect that the BCRA would have impeded these trends. If anything, it is likely that wealthy soft money donors from the pre-BCRA era applied their political budgets towards further proliferation of the unaffiliated PAC community in the post-BCRA era. This would further drive both the transitivity increase we observe in the DCON time series, and the transitivity decrease we observe in the SID time series.

2.3.2   Node Counts

Next, I examine statistics relating to the actors, or nodes, in the networks. These analyses allow us to better understand who is participating in the campaign finance networks and how the participation rates of different sets of actors have changed over time. The FEC provides some classification information on political committees, separating, for example, party committees from candidate committees from political action committees. Additionally, most PACs are classified according to their type of affiliation: PACs representing corporations, labor unions, membership organizations, and trade associations, for example, are classified separately. PACs with no affiliation to another organization are classified as unaffiliated PACs. Supplementing the codings provided by the FEC, I have also identified the national and state party committees for each major party, and I have separated major party general election House candidates from candidates who were defeated in primary elections. Figure 2.3 presents time-series plots of counts for each of these committee types, with the top panel showing the DCON networks, and the bottom panel showing the SID networks. These plots contain a number of interesting features that illuminate the development of campaign finance networks.

Corporate PACs

Let us start by considering those features that are common to both sets of networks. First, it is evident in both time series, that the number of corporate PAC nodes have increased dramatically from 1980-2010. In the DCON networks, the number of corporate PACs increased by 51.8% from 1980 (1074 nodes) to 1988 (1631 nodes). From 1990 onward, the number of corporate PACs stabilizes in the DCON networks, ranging between 1411 and 1582. In the SID networks, corporate PAC nodes increase more gradually and consistently over the period from a minimum in 1982 of 352 nodes to 2008 maximum of 1006. These patterns provide a useful illustration of the differences between the development of committee-committee contributions, as represented in the DCON networks, and the development of individual contributions, as represented in the SID networks.

The most plausible explanation for the fast rise of corporate PAC nodes in

the DCON networks is that corporations in the 1980s were adapting their donation behavior to the new legal framework established by the FEC. Given that PACs did not exist as a legal concept until the late-1970s, it makes sense that corporations would take several electoral cycles to establish their PACs and learn how to operate them effectively. The relative stability in the number of corporate PAC nodes after 1988 suggests that by that time nearly every corporation that desired to form a PAC had done so. In the SID network case, however, the number of corporate PACs increases more slowly and does not appear to stabilize. In order to explain this phenomenon, let us recall that in order for a committee to be included in the SID network, it must share at least one individual donor with at least one other political committee. Thus, any increase in corporate PAC nodes must be driven by an increase in the number of individual donors who contribute both to a corporate PAC and to another committee, perhaps a campaign committee or party organization. Furthermore, it is likely that the majority of corporate PAC donations from individuals come from employees of the affiliated corporation. This implies that an increase in the number of corporate PAC nodes in the SID networks is driven by an increased willingness of corporate PAC contributors to also contribute to other political committees.

There are a number of reasons why this might be the case. For example, it could be the case that corporate PAC donors have come to realize that they can amplify the impact of their political activity by contributing maximum amounts to both their corporate PAC and to their corporation's favored candidates and/or party. Additionally, it has been well established that party organizations and campaign committees have dramatically improved their abilities to target sympathetic donors based on metadata and compel greater contribution rates as a result. Disclosure databases such as the ones used in this study imply that anyone who had donated in the past to a corporate PAC could be easily targeted by the parties. Presuming that the parties could then make a compelling case for the link between corporate PAC interests and party interests, it is likely that such targeting would increase the incidence of shared edges between corporate PACs and party organizations and candidates. Thus, the increase in corporate PACs in the SID networks

may also reflect the increasing organizational capacity of parties and campaigns.

Unaffiliated PACs

The second feature of Figure 2.3 that I wish to highlight is the tremendous increase in the number of unaffiliated PAC nodes in both the SID and DCON networks over the period from 1990 to 2010. In 1990, there were 79 unaffiliated PACs in the DCON network and 45 in the SID network. By 2010 these counts were 1272 (DCON) and 921 (SID), representing increases of 1510% and 1947%, respectively! In both network types, unaffiliated PACs have gone from the smallest category of node to the second largest. Attempting to explain this explosion of activity requires a more complete understanding of the unaffiliated PAC universe. Unaffiliated PACs are those which have no formal association with a political party, campaign committee, labor union, corporation, trade association, or membership organization.

Despite their lack of formal affiliations, many of these groups are nakedly partisan or explicitly ideological. One of the most active unaffiliated PACs in 2010 was "Every Republican is Crucial (ERICPAC):" a 'Leadership PAC' run by associates of House Majority Leader Eric Cantor. The ERICPAC homepage, which features a large picture of a smiling Eric Cantor, encourages visitors to its website to "make a donation to help ERICPAC support Republican candidates," but is careful to note (in much smaller type) that the PAC is "not authorized by any candidate or candidate's committee." Leadership PACs such as ERICPAC are commonly employed by incumbent congressmen to raise money to support the campaigns of ideologically like-minded colleagues, and have been shown both to increase the chances of the associated member rising to congressional party leadership (Heberlig 2003), and to increase the ideological polarization of party leadership in Congress (Heberlig, Hetherington & Larson 2006). Other examples of leadership PACs include "The Freedom Project," run by associates of House Speaker John Boehner, and "PAC to the Future," which is associated with Minority Leader Nancy Pelosi. In addition to leadership PACs, the unaffiliated PAC category contains a number of other partisan and ideologically-driven groups. Examples from

Full DCON Networks, Nodes by Type

Full SID Networks, Nodes by Type
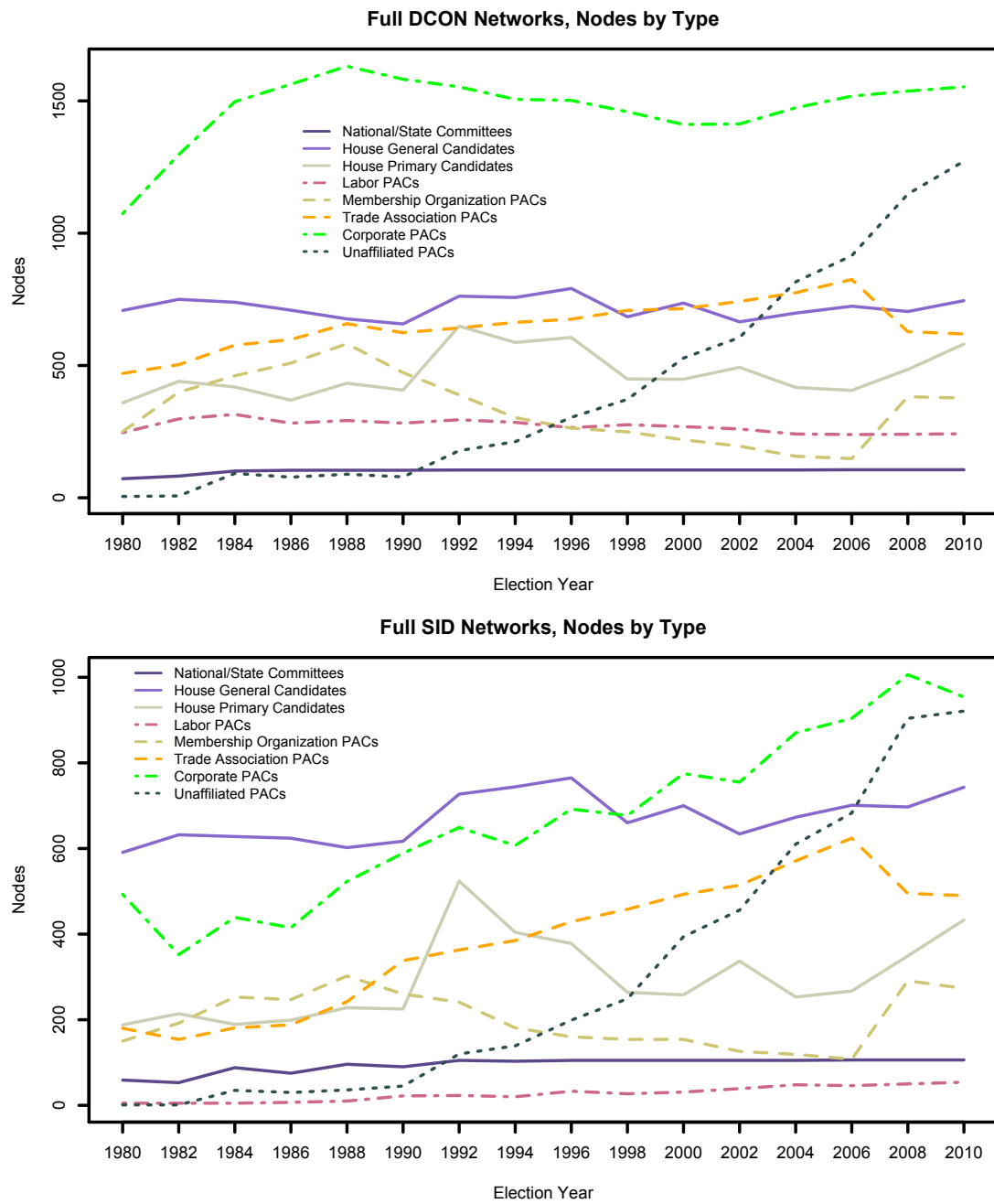
Figure 2.3: [Color online] Node counts for Direct Connection (top) and Shared Individual Donor (bottom) campaign finance networks, by node type.

2010 include "AmeriPAC," an organization devoted to expanding the influence of conservative ideologues in government, and the "New Democrat Coalition PAC," which supports the activities of ideologically moderate Democrats.

We can see from these examples, that unaffiliated PACs, though not legally connected to any campaign, candidate, or party, are predominantly engaged in the partisan and ideological conflicts that play out over the course of federal election cycles. Notably, the explosive increase in such PACs occurs contemporaneously with dramatic rises in observed ideological polarization both in Congress (McCarty, Poole & Rosenthal 2007) and in the electorate (Jacobson 2006), though the causal relationship between these two phenomena is not well understood. Two other developments, however, are likely to have influenced the rise of unaffiliated PACs: campaign finance legislation, and partisan competition.

The modern history of campaign finance reform began with the passage of the Federal Election Campaign Act (FECA) of 1971, which required the disclosure of contributions to federal campaigns and established various contribution limits. The provisions of FECA were supplemented and modified by packages of major amendments in 1974 (which created the Federal Election Commission), 1976, and 1979. These regulations set per-election limits on the amount of money individuals could contribute to PACs ($5000), and to national party organizations ($20000), and set a limit on the amount that PACs could contribute to one another ($5000). The regulations emerging from the 1979 FECA amendments remained basically unchanged until the 2002 passage of the Bipartisan Campaign Reform Act (BCRA), which increased many of these limits and indexed future limits to inflation. As a practical matter, contribution limits in campaign finance have a simple but powerful effect: they require campaigns, parties, and other political entities to expand their contributor bases in order to increase their budgets.

Take, for example, a hypothetical campaign committee, Can1. Prior to FECA, if Can1 needed to raise c dollars for a general election, it could simply collect this money from a single wealthy donor or interest group. After FECA, however, raising the same amount of money would require the committee to find d donors, where $d = c/5000$, assuming that each donor gave the maximum legal

contribution, leaving `Can1` with two complementary strategies. Strategy 1 would be to actively expand the donor base by engaging in the costly process of locating new donors, contacting them, and eliciting contributions. A campaign pursuing this strategy in isolation would have to find at least d unique donors. Strategy 2 would be to encourage wealthy supporters to form their own 'unaffiliated' PACs. These PACs could then each contribute $5000 the campaign, in addition to the $5000 contributed by the individual running the PAC, doubling the effective contribution of the PAC-forming individual. In the extreme case where every donor forms her own PAC, this strategy would then require `Can1` to locate only $d/2$ unique donors, substantially decreasing the cost to the campaign of finding new money.

Importantly, these strategies are not mutually exclusive, and it is apparent that party organizations and campaign committees, insofar as they have an incentive to maximize their budgets, have an incentive both to seek donations from a broader array of donors, and to encourage wealthy supporters to form 'unaffiliated PACs.' In other words, contribution limits give political committees the incentive to *develop and expand their campaign finance networks*. The incentive to maximize campaign budgets, however, does not derive from the existence of contribution limits. Rather, this incentive likely derives from the level of *partisan competition* for control over the levers of government in the form of congressional majorities and presidential election victories. It is well-known, for example, that the amount of spending in congressional races is closely related to the competitiveness of the campaign (Jacobson 2004), that party organizations channel the majority of their financial resources to these 'battleground' races (Jacobson 1985-1986, Herrnson 1989), that majority status in Congress is incredibly valuable for both campaign fundraising (Cox & Magar 1999) and agenda control (Cox & McCubbins 1993, Cox & McCubbins 2005), and congressmen have been increasingly required to contribute to the party's coffers as a condition of advancement in the party hierarchy (Larson 2004).

Thus, as competition increases, we should expect to see the parties exert greater effort to maximize their campaign budgets. In the post-FECA environment, this can only be accomplished by expanding donor bases, both by locat-

ing new existing populations of donors, and by encouraging the development and growth of unaffiliated PACs. In the period from 1980 to 1990, these competitive incentives did not exist: the GOP had long dominated presidential elections, and the Democrats had long dominated congressional elections. Since there was little uncertainty from election to election who would maintain control of crucial political institutions, there was little incentive to pursue ever-expanding campaign coffers by encouraging the development of unaffiliated PACs. Beginning with the 1992 presidential election, however, in which moderate Democrat Bill Clinton broke the GOP stranglehold on the Presidency, and continuing with the shocking 1994 congressional elections, in which the GOP ended decades of Democratic dominance in congress, it became clear that competition for both the Presidency and congressional majorities would be much stiffer going forward. Unsurprisingly, this is the period during which unaffiliated PACs begin to proliferate.

Affiliated vs. Unaffiliated PACs

Additionally, over the first decade of the time-series, the universe of campaign contributors was still adapting to the regulations created by FECA, meaning that the universe of *affiliated* PAC donors was still expanding. By affiliated PACs, I mean those PACs associated with corporations, membership organizations, trade associations, and labor unions. We observed part of this phenomenon above, noting the rise of corporate PAC nodes in the DCON networks from 1980 to 1988. Two other categories of affiliated PACs, membership organizations, and trade associations, also see their highest rate of growth over this period, as can be observed in the top panel of Figure 2.3. With the universe of affiliated groups still growing, it is possible that parties and campaigns were able to reap large enough increases in funding from this expanding population of donors, rather than encouraging an expansion of the unaffiliated PAC population, or engaging in expensive voter targeting activities. If this were the case, we would expect to observe an increase in unaffiliated PACs only when the population of affiliated groups ceased growing. As it happens, this is exactly what we observe.

In the 1980 DCON network, there were 2040 'affiliated' PACs, a number

which includes corporate, trade, membership, and labor PACs. By 1988, this number had risen to 3163, a 55% increase, and the maximum value for the time-series. From 1990 to 2010, by contrast, we observe a maximum of 2961 (in 1990) such PACs, and minimum of 2614 (in 2002). In the 2010, the final year of the time series, we observe 2791 affiliated PACs, a 11.8% *decrease* from 1988. Measuring the standard deviation of affiliated PAC counts in the two eras, we find a standard deviation of 440.8 for the period from 1980 to 1988, but only 159.5 for the period from 1988 to 2010. By these measures, it is apparent that the population of affiliated PACs reaches an equilibrium point at about 1988, and remains stable thereafter. Logically, then, we would expect the parties to begin pursuing an expansion of the unaffiliated PAC population and the individual donor population starting around 1990, and the evidence presented here supports that expectation. From 1980 to 1990, we observe growth in the unaffiliated PAC population from 5 to 79 nodes, with a maximum of 92 (in 1984) and a standard deviation of 40.9. From 1988 to 2010, the unaffiliated PAC population increases every year to a maximum of 1272 nodes, with a standard deviation of 405.0. The proliferation of unaffiliated PAC nodes begins just as the population of affiliated PACs reaches a steady state.

2.4   Community Detection Using Modularity

In this section, I describe the network science concept of modularity, which I use to evaluate community structures in the federal election donation networks. I then describe the algorithms used to find the community structure that maximizes modularity. Finally, I review the techniques used to evaluate the identified communities.

I begin the discussion of community structure by defining a community partition. In a community partition, every node in a given network is assigned to precisely one community, with no overlap between communities. In order for a community partition to be meaningful, however, we must have a criterion for evaluating its quality. *Modularity* provides a conceptually simple way to evaluate the quality of a given community partition using the information con-

tained in the edges of the network (Porter, Onnela & Mucha 2009, Newman & Girvan 2004, Newman 2006b, Fortunato 2010). In a network, however constituted, nodes relate to one another through the presence or absence of shared edges. Modularity assumes that nodes in the same community should share more ties with each other (intra-community ties) than with nodes in other communities (extra-community ties)(Newman & Girvan 2004, Newman 2006b).

Considering a contribution network, this assumption makes intuitive sense. Suppose we partitioned a contribution network into Democratic and Republican communities. Under normal circumstances we would expect Democratic committees to contribute money almost exclusively to other Democratic committees, and would believe the community structure to be quite strong. If, however, we encountered a situation in which Democratic and Republican committees were regularly sharing money with one another, we might question the value of the party label as an informative cue, and consider the party communities to be weaker. In either case, the modularity score of such a community partition would reflect our intuition. Importantly, however, the modularity score is calculated based solely on the presence or absence of network connections, and is agnostic to other assumptions about the structure of the political system. This allows us to calculate the modularity statistic for any hypothesized community partition.

2.4.1 Methods

More formally, for a given community partition, modularity Q represents the fraction total tie strength m contained within the specified communities minus the expected total strength of such ties. The expected strength depends on an assumed null model. I use the standard Newman-Girvan null model that posits a hypothetical network with the same expected degree distributions as the observed network (Newman 2006b, Newman 2006a), yielding the equation

$$Q = \frac{1}{2m} \sum_{ij} \left[A_{ij} - \frac{k_i k_j}{2m} \right] \delta(g_i, g_j), \tag{2.1}$$

where $m = \frac{1}{2} \sum_i k_i$ is the total strength of ties in the network, $k_i = \sum_j A_{ij}$ is the weighted degree (i.e., the strength) of the ith node, g_i is the community to which

i belongs, and $\delta(g_i, g_j) = 1$ if i and j belong to the same community and 0 if they do not. If the community partition is strong, a greater percentage of the total tie strength of the network will be contained in the communities than would be expected by chance, and the modularity score will be large and positive.

The modularity statistic gives us an intuitively satisfying criterion for evaluating the quality of a given community partition. Given the assumption about community strength that underlies modularity, it follows that the best community partition for a network is the one that maximizes the modularity score. Modularity optimization, however, is an NP-complete problem (Brandes, Delling, Gaertler, Goerke, Hoefer, Nikoloski & Wagner 2008), so identifying the correct partition requires the use of a computational algorithm, several of which have been developed for this purpose (Danon, Diaz-Guilera, Duch & Arenas 2005, Porter, Onnela & Mucha 2009, Fortunato 2010).

In this chapter, I employ three different community detection algorithms which have been implemented in the R package *igraph* (Csardi & Nepusz 2006). These are the 'fastgreedy' method (Clauset, Newman & Moore 2004), the 'walktrap' method (Pons & Latapy 2005), and the 'multilevel' method (Blondel, Guillaume, Lambiotte & Lefebvre 2008). Though the details of these algorithms vary, each starts by partitioning the network under consideration into n communities, where n equals the number of nodes in the network. The algorithms then iteratively combine nodes together to form communities based on the particular criterion applied in the algorithm. This iterative process continues until all of the nodes in the network have been combined into a single community. At each iteration of each algorithm, a new partition is created, and a modularity score is calculated. When an algorithm finishes iterating, the partition associated with the highest modularity score is selected as the 'best' partition. The end result is a set of three community partitions and their associated modularity scores; one partition and score for each of the three algorithms. From this set of three, I select the partition associated with the highest overall modularity score for use in subsequent analyses.

One drawback to the algorithms used in this study is that they are unable to process networks with directed edges, such as the DCON campaign finance

networks. Thus, for the purposes of finding community partitions and modularity scores, I treat the DCON networks as *undirected* networks. In the undirected versions of the networks, any two nodes i and j are considered connected if any directed connection exists between them ($i \rightarrow j$ or $j \rightarrow i$), and the weight of the undirected edge is equivalent to the weight of the directed edge. If edges $i \rightarrow j$ and $j \rightarrow i$ both exist, then the weights of those two edges are summed to calculate the weight of a single edge in the undirected network. In the SID networks, where the edges are undirected to begin with, no additional steps are required in order to apply the community detection algorithms.

Table 2.3: Community detection statistics for Direct Connection and Shared Individual donor networks. Q is the modularity score, $\#C$ is the number of communities, $Mn.C$ is the mean community size, and $Med.C$ is the median community size.

	Direct Connections				Shared Individual Donors			
	Q	#C	Mn.C	Med.C	Q	#C	Mn.C	Med.C
1980	0.61	63	66.4	3	0.34	21	104.1	3
1982	0.65	63	72.9	2	0.39	17	114.1	11
1984	0.65	58	89.7	2	0.36	24	92.2	2
1986	0.63	48	104.9	2	0.33	19	112.4	3
1988	0.64	61	87.4	2	0.31	26	94.1	3
1990	0.59	68	72.9	2	0.33	22	117.4	3
1992	0.52	73	75.3	2	0.33	28	117.4	2
1994	0.42	65	81.1	2	0.34	17	182.8	17
1996	0.51	68	79.5	2	0.34	17	195.4	28
1998	0.43	73	69.3	2	0.34	17	178.9	4
2000	0.54	68	78.0	2	0.34	14	243.6	8
2002	0.47	68	77.9	2	0.35	25	136.2	2
2004	0.60	56	101.1	2	0.37	31	121.7	2
2006	0.45	71	80.9	2	0.36	33	120.3	3
2008	0.61	60	103.5	2	0.37	27	164.6	3
2010	0.46	79	82.0	2	0.37	42	108.9	2

2.4.2   Results

The results of the community detection process for both the DCON and SID networks are summarized in Table 2.3, and time-series plots of the detected modularity scores and the number of detected communities are presented in Figure 2.4. In this section, I consider the substantive implications of the modularity time series and other network-level assessments of community structure in light of the

narratives that emerged from the analyses of network and node level statistics in Section 2.3. Subsequently, in Section 2.5, I analyze several community and node level measures derived from the detected community partitions.

Recall that analyses of network and node level statistics in Section 2.3 provided evidence that the size and connectivity of the DCON and SID networks have been increasing over time, and particularly since the late 1980s and early 1990s, when the GOP lost its grip on the Presidency and the Democrats lost their dominance of Congress. All of the measures presented thus far have conformed to a narrative in which intense competition over control of national political institutions has driven the major parties to pursue ever-expanding campaign budgets. The evidence further suggests that the constraints of campaign finance law have forced parties to continually expand their individual and committee donor networks. The need for constant donor network expansion, combined with the elimination of soft money in 2002, appears to have fueled an incredible proliferation of ideologically oriented 'unaffiliated' PACs since 1992. While these unaffiliated groups undoubtedly provide the parties and campaigns with badly needed funds, scholars worry, with some evidence, that these groups are simultaneously driving inter-party polarization and intra-party fractionalization, especially since the passage of BCRA (La Raja 2008, Herrnson 2009, Koger, Masket & Noel 2010). The analyses presented here corroborate some of those fears.

DCON Modularity

Let us turn our attention to the top panel of Figure 2.4, which charts modularity levels in the DCON and SID networks from 1980 to 2010. Remember that modularity quantifies the divisions between communities of nodes in a network based on the ratio of intra-community edges to inter-community edges. High levels of modularity in he DCON networks imply a community structure in which nodes in the same community donate to one another with great frequency, and seldom donate to nodes outside their community. Analogously, high levels of modularity in the SID networks imply a that members of the same community share many individual donors, while members of different communities share few.

Full Networks, Modularity Scores
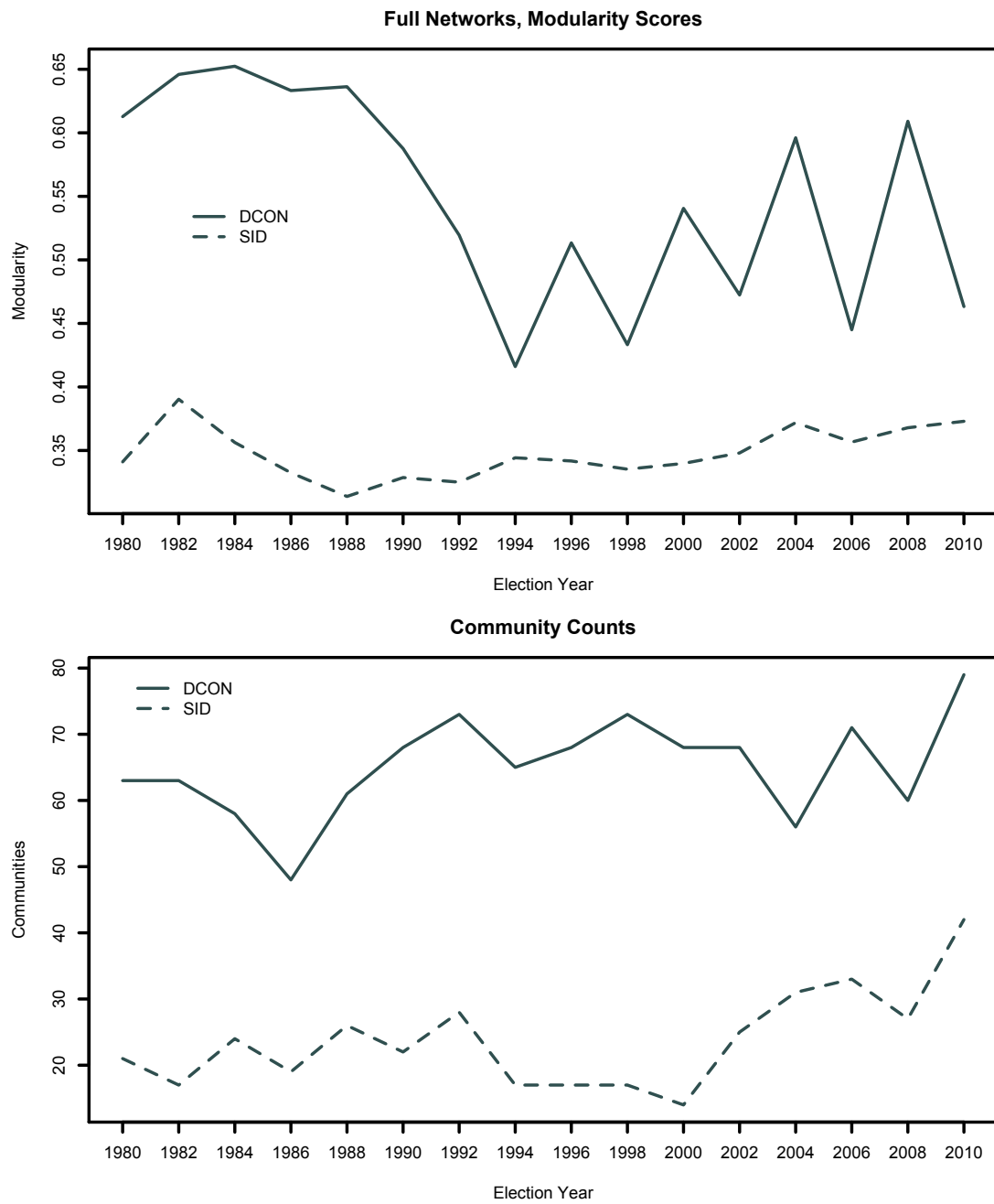
Community Counts

Figure 2.4: Modularity scores (top) and community counts (bottom) for Direct Connection and Shared Individual Donor campaign finance networks.

The modularity trend in the DCON networks is quite striking. From 1980 to 1988 the time series is characterized by consistently high levels of modularity, suggesting the presence of a stable and very well-defined community structure among political committees throughout the 1980s. Beginning in 1988, modularity plummets, eventually bottoming out in 1994. This reflects a substantial weakening in the divisions between communities of donors. It can hardly be a coincidence that this dramatic shift occurs over the precise period in which we observe increased major party competition over the control of national institutions.

By the time modularity reaches its minimum in 1994, the Democrats have proven their ability to compete for the Presidency and the Republicans have proven their ability to compete for majorities in Congress. Under these conditions, it makes sense that we would witness a shift in the allegiances of political committees. In the 1980s, while the Republicans dominated the White House and Democrats dominated the Capitol, PACs that wished to exert influence on the political system had little choice but to donate to Republican presidential candidates and Democratic incumbents in Congress, as party control over institutions during this period was a mostly foregone conclusion. It follows that the stability of political control would be reflected in stable communities of donors. As the parties became more competitive starting in the late 1980s, however, donors would have greater uncertainty over the likely outcome of elections, perhaps inspiring them to hedge their contributions. The decline in modularity observed from 1988 to 1994 is consistent with a hedging strategy on the part of PACs.

While modularity is generally increasing over the period from 1994 to 2010, the time series begins to show dramatic shifts in modularity between presidential and midterm election years, with modularity spiking during presidential elections and falling off during midterm elections. This corresponds to a period, seen in the bottom panel of Figure 2.1, during which we see a similar pattern emerge in the total edge weight of the DCON and SID networks. The total edge weight finding suggests that political committees have an easier time raising money during presidential election years, a finding which reflects an increase in perceived importance of the office over time. The corresponding spikes in modularity during presiden-

tial years suggest two possible uses for the influx of cash during these cycles. One possibility is that the increased spending in presidential years is being used to reinforce the same community divisions that exist during midterm years. Under such a scenario, contribution patterns among committees would remain relatively stable, but the weights of those contributions would increase dramatically, causing spike in modularity. Alternatively, it is possible that the extra money is being employed to bridge gaps between party factions that exist during midterm election cycles. Under this scenario, contribution patterns would be observed to shift dramatically, presumably as groups of donors coalesce around the Presidential candidates.

In the former case we would expect relatively little change in the number of communities found in the networks, while in the latter case we would expect to see a dramatic reduction in the number of communities. The time series plot of community counts in Figure 2.4 does not fully support either explanation. For the period from 1994 to 2002, community counts do not change dramatically from cycle to cycle, while from 2004 to 2010, community counts decline substantially in presidential election years. Thus, the finding for 1994-2002 fits a scenario of reinforced community divisions, while the finding for 2004-2010 fits a scenario of coalescing party factions.

SID Modularity

The modularity time series in the shared individual donor case appears to tell a substantially different story than the direct connections case. The highest observed modularity for the series occurs in 1982, in which the Democrats, taking advantage of a Reagan administration weakened by a recession, recovered many of the House seats they lost in Reagan's 1980 landslide victory. The spike in modularity and the decrease in community count in 1982 are both consistent with this scenario, as they suggest an environment in which individual voters shifted contributions to Democratic candidates, helping community divisions to coalesce, and causing the split between remaining communities to appear more pronounced. From 1982 to 1988, however, community divisions soften, and modularity declines, reaching its minimum in 1988. From 1988 to 2010, modularity in the SID networks

increases gradually and inconsistently, exhibiting large increases in some cycles and small declines in others. The largest increases occur in 1990, 1994, and 2004. The increases in 1990 and 1994 fit nicely with a narrative of increasing partisan competition: partisan committees have a greater need for individual donations, and ideologically-driven individuals sense an opportunity to alter the partisan power balance with their donations. As discussed above, the 2004 advent of BCRA also increased the demand for ideologically-motivated individual contributions, as parties looked to recoup lost soft money revenue, and entrepreneurial unaffiliated PACs emerged to facilitate the effort.

Comparing DCON and SID Partitions

Having considered the modularity time series for the DCON and SID networks in isolation, we are left wondering whether the communities found in the DCON networks bear any resemblance to those found in the SID networks. The network-level time series presented earlier provided some basic evidence that the two network types have evolved in similar fashions over time, and especially since the dawn of 1990s, when increasing party competition appears to have driven the parties to greatly expand their donor bases, leading to the explosive growth in ideologically-extreme unaffiliated PACs, and a corresponding rise in ideologically-motivated individual donations. This narrative carries with it two major implications for the evolution of campaign finance communities.

First, we should expect to see the community partitions in the DCON and SID networks become more similar over time, meaning that patterns of committee contributions should more closely correspond to patterns of individual contributions. This expectation derives directly from the expanding role of unaffiliated PACs, and is very similar to the logic used to explain the correlation between the transitivity time series in Figure 2.2. Unaffiliated PACs, I have argued, emerge mainly as a response to the demand among the parties and their candidates for increased campaign funding. Indeed, the primary task of these PACs is to develop networks of individual donors and encourage them to contribute both to the PAC and to ideologically similar candidates and party organizations. Presum-

ably, this is the same set of candidates and organizations to which the PAC itself will contribute. Unaffiliated PAC activity thus encourages the formation of the same edges in both the SID and DCON networks, which would have the effect of inducing similar community partitions in the two network types.

Second, we should expect to see the community partitions in the DCON and SID networks become more partisan over time. This narrative hinges crucially on the idea that partisan competition drives the need for expanded donor networks. As such, we would expect changes in the structure and composition of donor communities to reflect an increase in partisanship. Campaign contributions should become more polarized at both the committee and individual level as donors sort into ideological camps. In the communities, Democrats should be increasingly likely to cluster with Democrats, and Republicans with Republicans; inter-party community memberships should decline.

I employ a metric called *variation of information* to look for empirical evidence of these implications in the structure of the campaign finance networks. Variation of information employs principles of information theory to measure the distance between two partitions of a set of elements (Meila 2007), and is commonly employed as a tool to evaluate the quality of new community detection algorithms. Variation of information is defined by the equation

$$VI(X;Y) = H(X) + H(Y) - 2I(X,Y), \qquad (2.2)$$

where X and Y are the partitions, $H(X)$ and $H(Y)$ are the entropies of X and Y, and $I(X,Y)$ is the mutual information between X and Y. Entropy measures the uncertainty of a variable (Shannon 1948). For variables with finite number of outcomes, such as a community partition, X, entropy is equal to $H(X) = -\sum_{i=1}^{n} p(x_i) \log p(x_i)$, where n is equal to the number of possible outcomes (in our case, the number of communities), and $p(x_i)$ is the probability mass function of outcome x_i. Mutual information measures the mutual dependence of two random variables, X and Y, and is defined as $I(X;Y) = \sum_{y \in Y} \sum_{x \in X} p(x,y) \log(\frac{p(x,y)}{p(x)p(y)})$, where $p(x,y)$ is the joint probability distribution function of x and y, and $p(x)$ and p(y) are the marginal probability distribution functions of X and Y. Variation of information decreases as X and Y become more similar (and therefore more

mutually dependent) and reaches its minimum of 0 only when the two partitions are identical.

Partition Similarity Across Network Types

In order to assess whether the DCON and SID partitions have become more similar over time, I must first make the partitions directly comparable. Though the sets of nodes in the two network types overlap, they do not do so perfectly. In any given electoral cycle, there are 1800 or more nodes from the DCON network that are absent from the SID network. This is due to the fact that many nodes in the DCON network either do not receive individual donations at all, or only receive donations from individuals who were not found to contribute to any other committees. Had these nodes been included in the SID network, however, they would be considered *isolates*, because they would have no edges connecting them to any other nodes. Given this fact, there are two possible ways to calculate variation of information to compare the DCON and SID partitions. The first way is to treat the SID network as if the missing nodes were present by adding them to the network as isolates, and assigning each isolate node to its own community of size 1. Had we included these nodes during the community detection process, this is what the algorithms would have done. This ensures that every unique node in either network is factored into the variation of information calculation. The alternative is to compare the partitions only of the nodes that are common to both networks. The solid line in Figure 2.5 charts the results for the first option (unique nodes), while the dashed line charts results for the second (intersecting nodes).

Obviously, the variation of information is much higher in the unique nodes time series. This is a due to the addition of the isolate nodes to the SID network. Isolate nodes, with their 'communities' of size 1, greatly increase the randomness of an SID partition, which drives up its entropy value. Additionally, we know that these isolates in the SID network not only exist in the DCON networks, but are also members of non-isolate communities. Thus, the mutual information between the SID and DCON partitions cannot possibly account for the increased entropy in the SID networks, meaning the variation of information must inevitably be
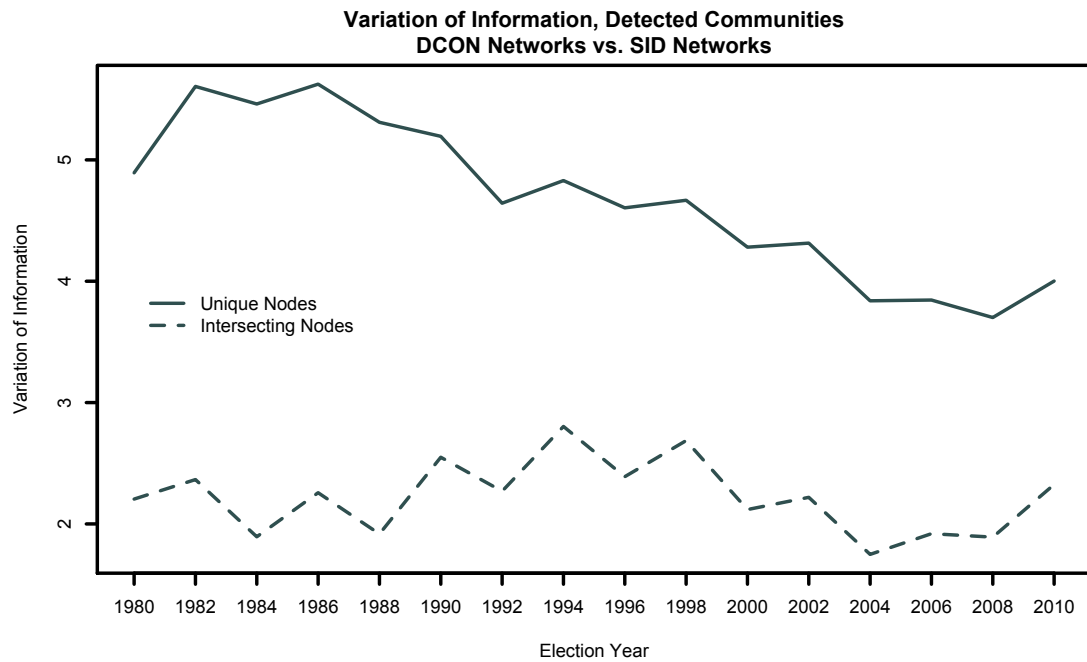
Figure 2.5: Variation of information metric comparing community partitions in the Direct Connection networks to those in the Shared Individual donor networks. Solid line represents the variation of information for nodes that are present in either network. Dashed line represents scaled variation of information only for nodes present in both networks.

larger. The time trend, however, is the primary concern of our narrative. In the unique nodes case, variation of information shows considerable decline over time, consistent with our expectation. In the intersecting nodes case, however, variation of information is low in the 1980s, increases over the early 1990s, and then declines once more.

Fortunately, the differences in the trend lines may be easily explained. Recall that over the course of the 1980s, the DCON networks rapidly expand to include 100s more corporate PAC nodes, while the corporate PAC population in the SID networks increases much more gradually. This means that over the first decade of the time series, the DCON networks were adding nodes that did not appear in the SID networks. When we then consider these nodes to exist in the SID networks – a reasonable a decision, given that they were active spenders in the electoral cycle – we observe much higher variation of information. Over the course of the 1990s, however, unaffiliated PACs began to enter both networks in large numbers. Additionally, corporate PACs that had been in the DCON network for many cycles began to appear in the SID networks. Thus, the proportion of isolate communities in the SID networks is no longer increasing, and we should expect to see the two lines in Figure 2.5 follow the same trend. Looking at the two lines from 1994-2010, when unaffiliated PACs begin to drive the increase in node populations, we do indeed see similar trend lines. More importantly, with the exception of 2010, the trend is downward, implying that community structures in the DCON and SID networks are becoming more similar. The upward spike in 2010 represents a striking reversal of the trend that I will explore in greater detail in the following section.

Partisanship Within Network Types

The second empirical implication of the competition narrative is that community structures in the SID and DCON networks should become more partisan over time. There are a number of ways the partisanship of community structures might be assessed. In this section I will again employ the variation of information metric to assess partisanship at the network level. In Section 2.5, I utilize a number

of community and individual level measures to assess the same phenomenon.
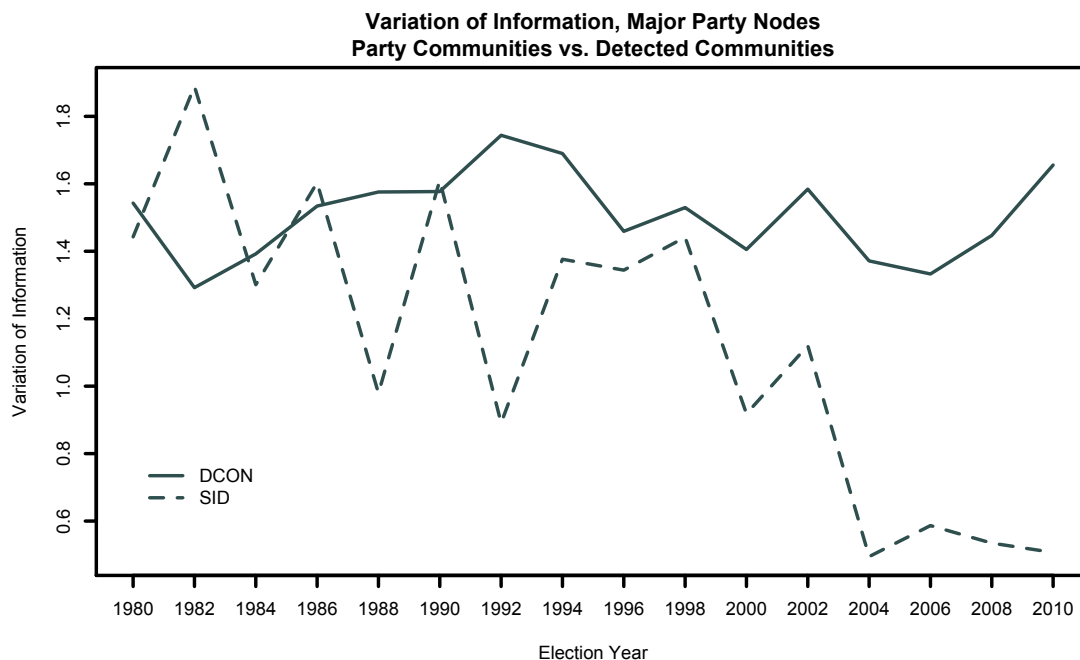
Figure 2.6: Variation of information metric comparing detected community partitions for major party nodes to an assumed community partition in which each set of major party nodes forms its own community.

Using variation of information to measure partisanship requires us first to imagine what a completely partisan community partition might look like. This hypothetical community structure would provide a baseline that could then be compared to the detected community partitions in the SID and DCON networks. The simplest, and by my estimation the most reasonable, hypothetical partition is one with two communities: one containing only Democratic Party nodes, and the other containing only Republican Party nodes. In practice, generating such a partition requires knowing the party affiliations of nodes in advance. Luckily, party affiliations are reported by committees in their FEC filings, so this task turns out to be trivial. Of course, for various legal and strategic reasons, many political committees do not have expressed party affiliations. Additionally, a small subset of nodes in each electoral cycle consists of minor party committees. The emerging narrative suggests that increasing partisanship should force these non-party committees to sort into partisan camps, and some evidence of this pattern has been

observed in the PAC literature (Herrnson 2009). However, it is impossible to decide *a priori* how these assignments would occur on a committee by committee basis, and my hypothetical partisan partition has no prediction for the classification of non-party nodes. Such nodes are therefore excluded from the variation of information analyses presented here, though I take up the question using node-level measures in Section 2.5. Thus, for each network type, and for each electoral cycle, I calculate the variation of information between the detected partitions of major party nodes and a hypothetical partition of two communities in which Democrats and Republicans are perfectly sorted. The results are presented in Figure 2.6. Relevant summary statistics for partisan nodes and their detected partitions are reported in Table 2.4.

The trends observed in Figure 2.6 are simply fascinating. They conform nicely to our expectations in some respects, but also suggest areas for potential refinement. The partisanship trend for the SID networks fits the competition narrative almost perfectly. Over time, major party nodes in those networks have become substantially more similar to the partisan baseline, suggesting that the behavior of individual donors has become substantially more partisan, especially since 1998. Similar results have been found in analyses of ideological polarization in PAC and individual donor behavior (McCarty, Poole & Rosenthal 2007, Bonica 2012). Variation of information declines during every presidential election cycle, suggesting, consistent with conventional wisdom, that presidential campaigns create rallying points for the parties, encouraging both increased numbers of individual donors and increased partisan consistency of donation behavior. Correspondingly, variation of information increases in every midterm election cycle with the exception (again) of 2010. In these cycles, presumably, many presidential year contributors sit out the election, undoing the coalescent effects of the prior cycle's presidential campaigns and causing large partisan donor communities to fragment into smaller factions.

Cycle to cycle, presidential year declines in variation of information tend to greatly outpace midterm year increases, leading to the overall negative trend. Moreover, we see that midterm year increases are much smaller from 1998 to

Table 2.4: Summary statistics of community partitions for major party nodes in the DCON (top) and SID (bottom) networks. Column one is the electoral cycle. Columns 2 and 3 provide the number of Democratic and Republican nodes in each network. Columns 4 and 5 indicate the number of detected communities with Democratic and Republican members. Column 6 indicates the number of communities with members from both parties. Columns 7 and 8 present the Shannon entropy values for the detected major party partition and the hypothetical baseline partition.

Direct Connections

	Nodes		**Communities**			**Entropies**	
	Dem	Rep	Dem	Rep	Overlap	Detected	Partisan
1980	942	900	20	34	7	1.474	0.693
1982	905	828	19	30	4	1.291	0.692
1984	911	888	17	24	4	1.375	0.693
1986	914	811	21	24	6	1.454	0.691
1988	897	787	25	25	6	1.482	0.691
1990	783	674	21	31	3	1.500	0.690
1992	885	779	31	35	14	1.731	0.691
1994	889	808	19	28	8	1.736	0.692
1996	974	871	23	28	4	1.579	0.692
1998	763	722	31	27	13	1.665	0.693
2000	765	772	19	32	6	1.521	0.693
2002	805	760	23	31	7	1.629	0.693
2004	824	832	20	22	10	1.529	0.693
2006	905	744	20	22	6	1.542	0.688
2008	929	816	21	27	6	1.578	0.691
2010	874	1026	31	35	9	1.876	0.690

Shared Individual Donors

	Nodes		**Communities**			**Entropies**	
	Dem	Rep	Dem	Rep	Overlap	Detected	Hypoth
1980	598	631	10	11	8	1.384	0.693
1982	516	555	11	11	10	1.740	0.692
1984	590	554	9	7	5	1.262	0.693
1986	579	564	11	12	10	1.553	0.693
1988	590	559	11	8	8	1.077	0.693
1990	571	511	6	7	5	1.556	0.692
1992	684	657	11	13	10	1.115	0.693
1994	696	696	10	8	8	1.463	0.693
1996	744	733	11	9	9	1.495	0.693
1998	581	599	8	8	8	1.437	0.693
2000	578	632	5	8	5	1.217	0.692
2002	624	627	8	8	6	1.235	0.693
2004	632	681	6	4	3	0.827	0.692
2006	744	618	6	4	4	0.922	0.689
2008	780	708	5	7	4	0.959	0.692
2010	717	915	6	11	5	0.948	0.686

2006 than they had been from 1982-1994. This decline in cyclicality implies that individual donors have become more likely over time to contribute during midterm as well as presidential cycles, and to do so with increasing levels of partisanship. This shift, like so many other shifts observed in this chapter, is consistent with the parties' expanding demand for cash in the face of stiff electoral competition. Improvements in donor targeting and the customized delivery of ideological appeals have clearly abetted this process.

Turning our attention the the DCON time series, we see a remarkably different dynamic. Most notably, we see no sustained evidence that partisanship has increased over time in the community structures of these networks. Instead, we first observe a period of decreasing partisanship from 1982 to 1992, followed by a period of increasing partisanship (with the notable exception of 2002) from 1992 to 2006, and finally a second period of decreasing partisanship from 2006 to 2010. The decreasing partisanship we observe from 1982 to 1992 fits well with conventional wisdom. This is the period over which the parties became more competitive. During this time, the Democrats adopted more moderate policy positions, particularly on economics, in order to become more competitive in presidential elections (Hale 1995). Meanwhile, the Republicans aided by emerging grassroots conservative movements, expanded their reach into Democratic but socially conservative Southern states (Aldrich & Rohde 2000). The decrease in partisanship in the DCON networks almost certainly reflects these strategic changes. From 1992 to 2006, consistent with our narrative, we do observe increasingly partisan community structures. As in the SID networks, these declines are concentrated in presidential election years, and can most likely be attributed to the rising number and stature of unaffiliated PACs in the donor communities.

The most curious and potentially most significant finding here, however, lies in a comparison of the two time series in Figure 2.6, particularly over the period from 1994 to 2010. Over this period, we see that communities in the SID networks become radically more partisan, especially during the famously polarized presidential cycles of 2000 and 2004, with the networks sustaining high levels of partisanship from 2004 to 2010. The increasing partisanship of communities in

the DCON networks from 1994 to 2006 is tiny in comparison to the seismic shift in the SID networks. The evidence presented thus far provides strong evidence for the sorting of individuals, as do recent spatial analyses of the same underlying FEC data (Bonica 2012). Why, then, do we not see the DCON networks sort to the same degree? This result suggests that partisan polarization among individual donors vastly outstripped that of registered political committees.

It is likely that some of this disparity may be explained by the varying strategic interests of PACs as opposed to individual donors, as described in Section 2.3.2. PACs with affiliations to the business community, for example, have economic policy motivations that they must balance against any ideological concerns, and these motivations are relatively invariant to the overall ideological climate. Regardless of the congressional majority or the presidential administration, these groups have tax breaks and other federal policies that they wish to protect and expand, meaning that they have positive incentives to target important politicians, such as committee chairs (Romer & Snyder 1994), and not to alienate either major party, even if they have clear partisan preferences (Brunell 2005). The incentive for affiliated PACs to hedge their contributions would have the effect of reducing the partisanship of donor communities.

Factions

A second, and more interesting, potential explanation involves the strategic behavior of unaffiliated PACs: intra-party factionalization. In the narrative I have advanced, unaffiliated PACs emerge as the need for campaign financing under the restrictions of the FECA drives parties to outsource their fundraising efforts. The continued growth and popularity of these PACs, the increase in ideologically-based individual donations, and the increasing partisanship of the SID donor communities all suggest that these efforts have been successful. As I mention earlier, however, the political parties had little formal control over the behavior of these PACs under FECA, and have even less control after the passage of BCRA (leaving aside the actions of outside groups not regulated by the FEC), meaning that the utility of such groups as partisan fundraising agents depends critically on the ability of party

organizations to induce cooperation from their unaffiliated PAC allies. Given that these PACs tend to be ideologically motivated, it is reasonable to assume that they expect some level of ideological commitment on behalf of their allied parties. Absent such commitments, the party may risk factionalization in its donor base (La Raja 2008, Koger, Masket & Noel 2010).

However, even assuming that parties are willing to make commitments to their factions of unaffiliated PACs in order to secure cooperation, the expanding nature of the campaign finance networks, and the unaffiliated PAC population in particular, puts the parties in a precarious position. Parties not only need to maintain the loyalties of their existing donors, they need to be constantly expanding their donor bases in order to keep pace in the campaign finance arms race. This means they must target new individual donors, and encourage the formation of more unaffiliated PACs, a process that increases the number of stakeholders in the party brand and has the potential to introduce greater ideological heterogeneity to the donor base. More ideologically heterogeneous stakeholders, in turn, mean more constraints on the party's ideological and policy positions. Such constraints have been associated in theoretical models with a number of adverse outcomes, including general coordination failures (Olson 1965, Tsebelis 2002), electoral polarization (Aldrich 1995), weak legislative leadership (Aldrich & Rohde 2001), and legislative gridlock (Binder 1999). Computational models have further found that such conditions make it particularly difficult for challengers to locate and adopt electoral platforms that will unseat entrenched incumbents (Kollman, Miller & Page 1992, Kollman, Miller & Page 1998), a finding bolstered by empirical analysis (Ensley, Tofias & de Marchi 2009). Party leaders, clearly aware of these risks, go to great lengths to present their party as unified and their opposition as fragmented and incoherent. The negative agenda control power of House majority leadership is perhaps the most famous example of this phenomenon (Cox & McCubbins 1993, Cox & McCubbins 2005).

Unfortunately for the parties, their formal power to slow this process is limited, especially in the electoral arena. Despite decades of evidence of increased organizational power (Gibson et al. 1983, Herrnson 2002), parties have not even

proven particularly able to induce cooperation from their own incumbent congress-men (Leyden & Borreli 1990, Cantor & Herrnson 1997), who they could potentially reward with leadership positions and prime committee assignments. The apparent lack of party control over legislators, unsurprisingly, is found to derive from the abil-ity of those legislators to develop their own fundraising networks (Herrnson 1992). Incumbent congressmen, furthermore, have proven willing and able to leverage their fundraising prowess to improve their position within the party hierarchy (Heberlig 2003). Furthermore, as mentioned earlier, many of the new unaffiliated PACs that have crowded the campaign finance networks are Leadership PACs, which powerful incumbents employ to support the candidacies of like-minded in-cumbents. Sensibly, party leadership has responded by tying advancement in party hierarchy to contributions to party organizations (Larson 2004, Heberlig, Hether-ington & Larson 2006), demonstrating that party leaders still see value in party cohesion. However, the rise of Leadership PACs unquestionably implies that intra-party competition has become a more prominent feature of campaign finance net-works.

Rules that tie advancement in the legislative party to fundraising only fur-ther incentivize the development of powerful donor communities over which the party itself has little control. Factionalization may therefore be partly responsible for our observation in Figure 2.6 that the DCON networks have not converged to-ward the hypothetical two-partisan-community baseline. This would be the case if we observed donors in these networks becoming more partisan without necessarily becoming more cohesive. In this case, we could expect to see communities becom-ing more partisan, but we would not expect the overall number of communities to decrease. That said, if we find evidence of factions in the DCON networks, we must wonder why we should not also find similar evidence in the SID networks.

It may be the case that a large class of individual donors are simply not aware of intra-party factional struggles to the degree that political committees are. The party organizations, concerned as they are with presenting a cohesive brand, have no incentive to clue them in to such disagreements. Similarly, the factions themselves, hoping to one day wield control over the party, would have

little incentive to sow discord among loyal partisan donors on whom they may one day count for support. Additionally, we observe the largest sustained increases in SID partisanship during the presidential elections of 2000 and 2004, which were notorious for their extreme levels of partisan polarization (Jacobson 2006). The individual donors activated by these elections may only be tuned in to the ideological debate taking place between the two parties over the course of presidential elections, and totally oblivious to the underlying factional debates. Given the value of the presidency, even warring party factions would have some incentive to hide their struggles from these donors, fearing the potential damage to their party's presidential campaign.

2.5   Evaluating Community Structure and Composition

In addition to analyzing the evolution of modularity in the DCON and SID networks over time, I employ a variety of measures to help characterize the communities identified by the community detection process. Of these measures, *local modularity*, and *community partisanship* are calculated at the community level, and provide information about the relative strength of communities as a whole. The others, *participation score* and *within-community degree* are node-level measures, and allow me to identify nodes at the cores and peripheries of their respective communities, and to classify nodes based on their roles in the broader network.

2.5.1   Community Partisanship

I developed *community partisanship* to measure, predictably, the partisan leanings of a given community. I begin by calculating a partisanship score for each node, i in a given community, C. If node i is associated with the Democratic Party, it is assigned a partisanship score of 0. If node i is associated with the

Republican Party, it is assigned a partisanship score of 1.[3] If node i is not associated with either major party, I determine its partisanship score by calculating the total weight of its connections to Republican nodes, and divide this quantity by the total weight of its connections to both Republican and Democratic nodes. If node i only contributes money to Republican candidates (in the DCON networks), or only shares individual donors with Republican candidates (in the SID networks), then node i's partisanship score equals 1. Correspondingly, if node i only contributes money or shares individual donors with Democratic candidates, its partisanship score equals 0.[4] Once I have calculated the partisanship score of each node in a given community, C, I take the mean of these scores to be the level of *community partisanship*. This measure ranges from 0 to 1, with 0 representing a community consisting of only Democratic nodes and non-partisan nodes that only donate to Democrats, and 1 representing a community consisting of only Republican nodes and non-partisan nodes that only donate to Republicans.

Evidence of increasing donor community partisanship is abundant in these measures. One method of assessing partisanship is to look at the distribution of major party nodes across the revealed communities. In an environment of increasing partisanship, we should expect to see major party nodes increasingly concentrated in communities with very low (for Democratic nodes) or very high (for Republican nodes) *community partisanship scores*. Figures 2.7 and 2.8 provide density plots of these distributions for the DCON and SID networks, respectively.

Looking at the plots in Figure 2.7, we can see evidence of evolving party coalitions over time, in addition to evidence of increasing levels of partisanship. In early election cycles, for example, we observe that Democratic Party nodes are distributed in a bimodal fashion, with a large concentration of nodes in highly-Democratic communities, and a smaller group of nodes placed in Republican-leaning communities. This finding suggests that, throughout the 1980s, a large chunk of the Democratic Party received financial support from groups that pri-

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[3]These partisan associations are provided by the FEC based on the information given to them by the committees. Note that a committee may claim to be associated with either party without being formally 'affiliated' with that party's organizations.

[4]For the rare nodes that are not connected to either Republican or Democratic nodes, partisanship score is undefined. These nodes are not used in the calculation of community partisanship.
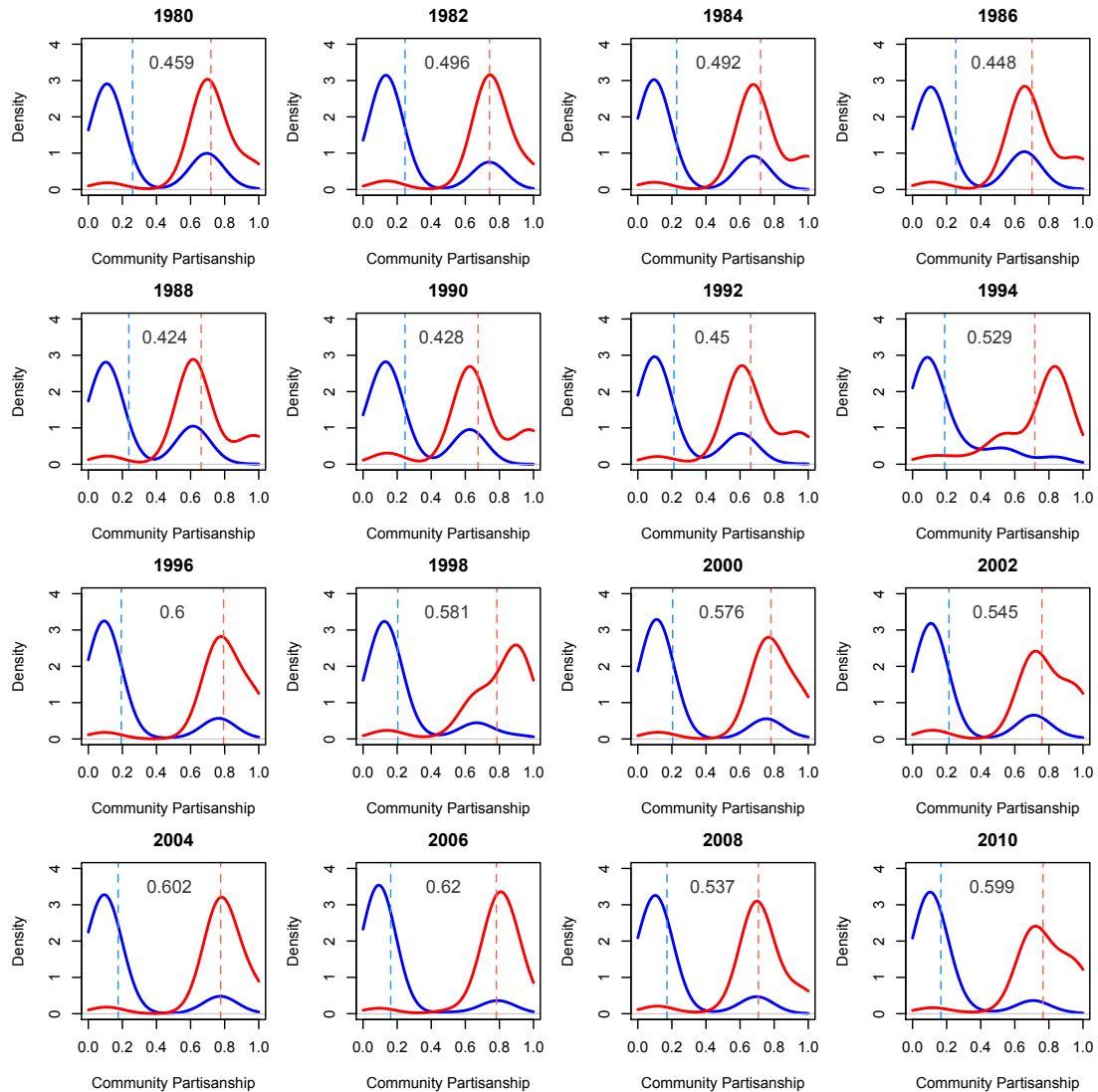
Figure 2.7: [Color online] Density plots of community partisanship scores for major party nodes in the Direct Connection networks. Solid blue lines represent Democratic nodes. Solid red lines represent Republican nodes. Vertical blue and red lines indicate the mean community partisanship score for Democratic and Republican nodes, respectively. Numbers in center of plots indicate the distance between party means.
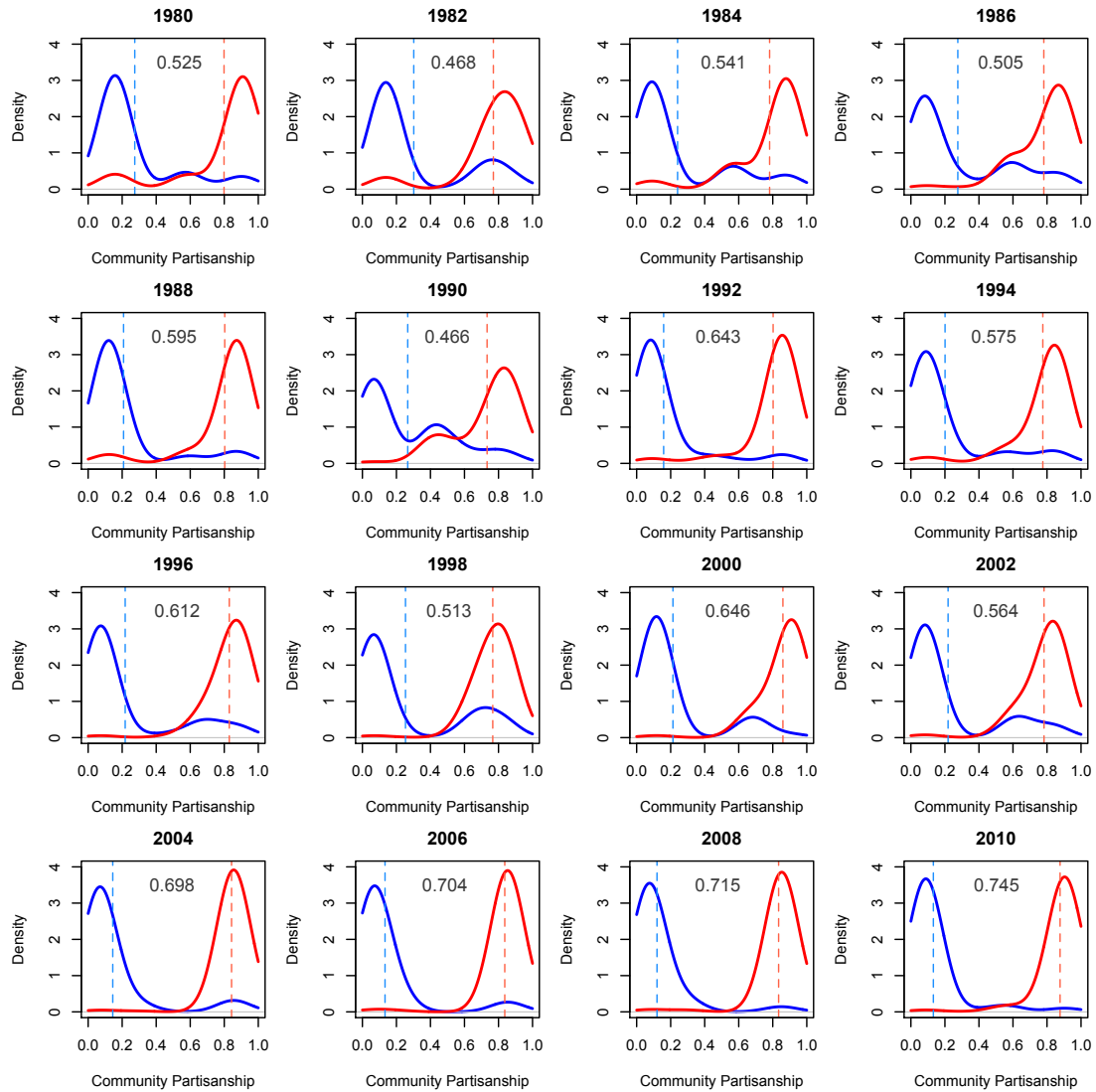
Figure 2.8: [Color online] Density plots of community partisanship scores for major party nodes in the Shared Individual Donor networks. Solid blue lines represent Democratic nodes. Solid red lines represent Republican nodes. Vertical blue and red lines indicate the mean community partisanship score for Democratic and Republican nodes, respectively. Numbers in center of plots indicate the distance between party means.

marily supported Republican Party committees and candidates. This corresponds to a period in which the Democratic Party, especially in Congress, was split between a liberal northern wing and a more conservative southern wing (Poole & Rosenthal 1997). It is therefore unsurprising that we should find the funding bases of the party similarly divided. Just as the southern Democrats in Congress were replaced over the late 1980s and early 1990s by conservative Republicans, so too do we observe Democratic nodes disappearing from Republican-leaning donor communities. This process culminates in the 1994 electoral cycle, when we observe these Democratic nodes nearly disappear, and the difference between the party means increase dramatically, from 0.45 in 1992 to 0.529 in 1994. Major party nodes continue to sort on a partisan basis in the 1996 electoral cycle, as we observe another substantial increase in the difference in party means, to 0.6. Interestingly, the difference between party means remains fairly stable over the period from 1996 to 2010, never dropping below 0.545, and never rising above 0.62. This finding indicates that increased major party competitiveness over national institutions, beginning in the early 1990s, was the primary source of increasing partisanship in donor communities in the DCON networks, and that subsequent developments, such as the passage of BCRA or continued increases in legislative polarization, have had little effect on the partisanship of these donor communities.

The results presented for the SID networks in Figure 2.8, however, tell a somewhat different story. In these plots we again observe increasing partisanship, but rather than being confined to the 1994 and 1996 electoral cycles, we observe partisanship increasing throughout the time series from 1980 to 2010. The distributions of major party nodes across donor communities over time suggest that increasing partisanship has occurred in two phases. In several of the early SID networks, we observe pockets of Democratic and Republican nodes occupying the middle of the community partisanship space, suggesting the presence of bipartisan SID communities. The presence of these communities, in turn, implies the willingness of individual donors to contribute in a bipartisan fashion. This phenomenon is most pronounced in the 1990 electoral cycle, where we also observe the smallest difference between major party means (0.466). 1990 is also the last

electoral cycle for which such a bipartisan community exists, as we see the center of the distributions disappear in 1992, yielding to highly partisan community divisions. The disappearance of bipartisan donor communities marks the end of the first phase, and also corresponds with renewed national competition among the parties for the Presidency and Congress. Throughout the 1990s, we observe evidence of Democrats and Republicans sharing center-right communities, most notably in 1998, but these communities all but disappear by the 2004 electoral cycle. From 2004 to 2010, we observe increases in partisan community divisions every cycle, as Democratic nodes appear less and less frequently in Republican-leaning communities, pushing the major party distributions farther apart. This process represents the second phase of increasing partisanship in the SID networks. Major party nodes consolidate into partisan communities as a necessary result of reduced rates of inter-party individual giving.

As with the variation of information results presented in Figure 2.6, the differences between the DCON and SID networks here are of substantive interest. The mean community partisanship scores for the major parties are plotted, along with the differences between the parties, in Figure 2.9. The bottom panel of Figure 2.9, in particular, shows that a dramatic increase in partisanship occurred in the SID networks in 2004 and was sustained through 2010, whereas, in the DCON networks, communities of major party nodes do not become substantially more partisan than they were from 1996 to 2002.

This finding provides more evidence of important differences between the behavior of registered political committees, especially affiliated PACs, and individual donors. It is possible that, in an environment of uncertain party control, affiliated PACs have responded by hedging their donations to both Democrats and Republicans. Such behavior would not only increase the likelihood of Democratic and Republican nodes being placed in the same communities, it would also reduce the community partisanship of even highly partisan communities if we observed affiliated PAC members of those communities slightly alter the partisan balance of their donations. We would expect the effects of such activity to be felt primarily in the DCON networks, where affiliated PAC nodes are more numerous relative
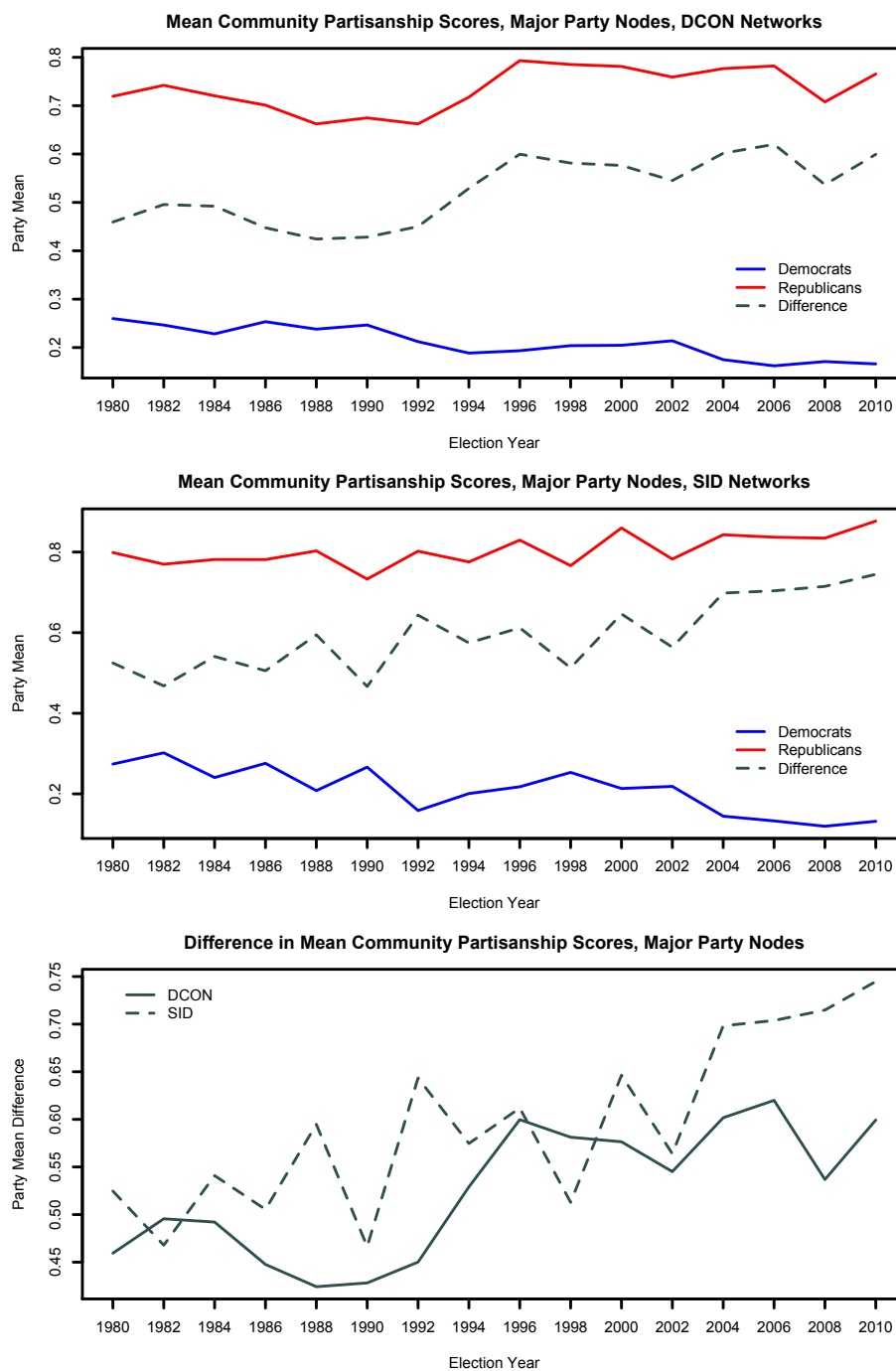
Figure 2.9: [Color online] Top: Mean community partisanship scores for Democratic and Republican Party nodes in the DCON networks. Middle: Mean community partisanship scores for Democratic and Republican Party nodes in the SID networks. Bottom: Differences between Democratic and Republican Party means for DCON and SID networks.

to unaffiliated PAC nodes. To the extent that unaffiliated PACs are ideologically driven, we would expect them to respond to increasing uncertainty by increasing their efforts to locate similarly ideological individual donors, and helping to channel contributions from those donors to their allied committees. The effects of unaffiliated PAC activity on community partisanship are therefore more likely to be seen in the SID networks, which reflect changing patterns of individual donations.

Additionally, Figure 2.9 provides further evidence of party responses to the passage of BCRA. As argued above, the passage of BCRA compounded the already pressing need for the parties to expand their individual donor bases in order to recoup losses incurred by the banning of soft money. Some of this money is collected on behalf of the parties by unaffiliated PACs, in the process described in the preceding paragraph, while the rest is collected by the party organizations themselves. Anecdotally, this narrative is reinforced by the actions of the DNC in response to the failure of the Kerry candidacy in 2004. Kerry was widely perceived to have lost a winnable election in 2004 due in part to the organizational superiority of the GOP fundraising machine, which, under the guidance of Karl Rove, had developed a then-state-of-the-art voter and donor targeting database. The Democrats responded in 2005 by tabbing Howard Dean to run the Democratic National Committee, largely in deference to Dean's demonstrated fluency in soliciting individual donations and grassroots participation via the Internet. The subsequent Democratic presidential victories in 2008 and 2012 have frequently been attributed to the organizational prowess of the DNC and the similarly tech-savvy Obama campaign. Republican losses in these elections have similarly been blamed on outdated voter and donor targeting systems, and poor coordination among an emerging class of conservative-leaning unaffiliated PACs, Super PACs, 527s, and 501(c)s.

Unlike the Democrats, who demonstrated remarkable competence in their ability to coordinate a national network of individual donors, the Republicans appear to have had a much more difficult time adapting to the conditions of BCRA, despite their electoral victories of 2004. There is a general consensus among scholars that the GOP relied more heavily on soft money donations than

did the Democrats (La Raja 2008), suggesting that Republicans would have had more ground to make up than their opponents. Additionally, evidence suggests that the GOP had used its soft money to establish a fundraising machine in the model of a multilevel marketing organization, in the fashion of corporations such as Amway, or Tupperware (Ubertaccio 2007). In this system, groups at lower hierarchical levels in the GOP machine were given substantial autonomy to raise money for their partisan coffers, provided that they kicked some of that money back up to higher levels of the hierarchy. The success of this operation in the 1980s and 1990s was commonly attributed to ideological homogeneity within the Republican Party (Gerring 1998), and the presence of an organizational culture in the GOP that demanded respect for hierarchical control (Freeman 1986) and rewarded cooperative and successful members with advancement in that hierarchy (Bibby 1994, Huckshorn 1994).

Coordinating the efforts of such a multilevel organization, of course, required the presence of a strong and well-financed national party. The Republican Party before BCRA was able to pay these coordination costs with soft money. The unlimited nature of soft money donations meant that the party could be financed by a small number of wealthy individuals, reducing both the number of stakeholders in the national organization and, correspondingly, the costs of coordinating party activity. La Raja (2008) finds that, in many cases, soft money transfers from the national party to lower level party organizations were offered in exchange for transfers of hard money from the local organizations to the national party. In this sense, soft money was used explicitly to induce cooperation from lower level organizations, both to encourage the transfer of hard money and to encourage continued participation in the hierarchy-driven GOP culture (Freeman 1986).

Without soft money contributions to pay its coordination costs and induce cooperation from its subsidiaries, the national Republican Party may have had a more difficult time adapting to the strategic conditions imposed by BCRA. BCRA demanded even greater expansion of donor bases, so it is reasonable to suppose that the semi-autonomous organizations occupying lower levels of the GOP hierarchy would respond to the new law by rapidly expanding their fundraising operations.

Unfortunately, this expansion would have occurred at the precise moment when the national party lost its ability to coordinate the activities of lower-level groups, reducing their incentives to cooperate with one another, and perhaps creating the conditions for these groups to splinter off from the party and form competing factions. Recent GOP history is fraught with evidence of factional disputes, from the chaotic presidential primaries of 2008 and 2012, to the ongoing battles between 'Tea Party' and 'mainstream' Republicans in the 112th and 113th Congresses, to the emergence of powerful independent donor organizations run by the Koch brothers, Karl Rove, and other wealthy party stakeholders.

The evidence presented in this paper suggests that any factionalization of the major parties should be driven by the rising importance of unaffiliated PACs, and that the parties should be particularly prone to factionalization after the passage of BCRA. The organizational history of the Republican Party, furthermore, suggests that it was particularly vulnerable. Additionally, evidence from both the variation of information measure in Figure 2.6 and the community partisanship plots of Figure 2.9 suggests that evidence for such factionalization is mainly to be found in the DCON networks and not in the SID networks. In Section 2.5.3, I pursue further evidence of factionalization by examining the changing role structures of nodes within the detected community partitions using the *participation score* and *within-community degree* measures.

2.5.2   Local Modularity

Local modularity, defined by Clauset (2005), provides a method for characterizing the strength of individual communities by examining the boundaries of the community.[5] The boundary subset, B, of a community, C consists of those nodes that have at least one extra-community tie, and excludes the nodes in C whose only connections are intra-community. As with global modularity, we expect the local modularity of a community boundary to increase as its ratio of extra- to intra-community ties increases. Local modularity, R, is therefore equal to I/T.

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[5]I adapt Clauset's (2005) local modularity for use with weighted networks following instructions provided in Newman (2004)

Here, T is the total weight of all edges with one or more endpoints in B, and I is the total weight of all edges with one or more endpoints in B and both endpoints in C. As the number and weight of extra-community connections on the boundary decrease, and the number and weight of intra-community connections on the boundary increase, local modularity approaches 1. Figure 2.10 shows the mean local modularity scores for nodes in the DCON and SID networks from 1980 to 2010.

Mean Local Modularity Score, All Nodes
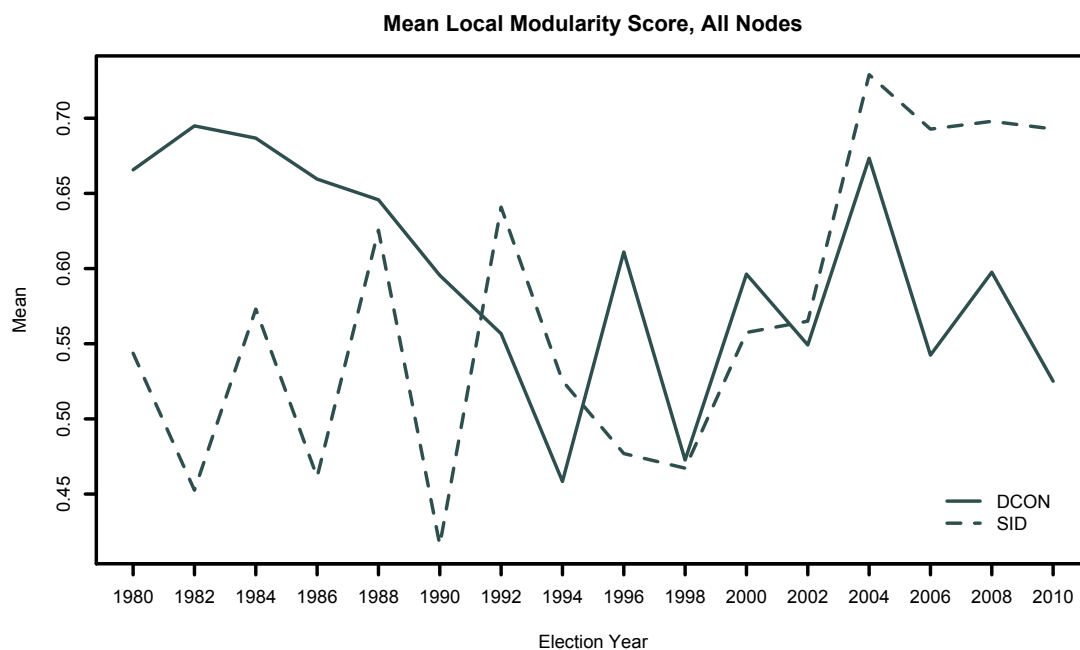
Figure 2.10: Mean local modularity scores for nodes in the DCON and SID networks.

Here, I use local modularity as a dependent variable to assess the effects of community partisanship on the structure of the DCON and SID community partitions. If communities are indeed becoming more partisan over time, and partisan divisions are becoming more salient to committee and individual donors, we should not only expect communities to coalesce around partisan factions, we should also expect those communities to share fewer ties with other communities, particularly those made up of opposing partisan nodes. Thus, as communities become more extreme in their partisanship, I expect they should also exhibit higher levels of local modularity. The key independent variable here is *community partisan extremity.*

This is calculated simply by subtracting 0.5 from the community partisanship score of each community and then taking the absolute value of the result.

In order to evaluate this hypothesis, I begin by creating two data sets of community-level variables, one for the DCON networks, and one for the SID networks, pooled across all 16 electoral cycles covered by the network data. The variables in each data set consist of the dependent variable, local modularity, the key independent variable, community partisan extremity, and a series of control variables. Control variables include the natural log of community size, and the proportion of community committees that are Democrats, Republicans, trade associations, membership organizations, labor unions, corporations, or unaffiliated PACs. For each network type, I fit two linear models: one covering electoral cycles from 1980 to 1992, and one covering electoral cycles from 1994 to 2010. In each specification, electoral cycle fixed effects are also included. I decided to partition the data into two sets, 1980-1992, and 1994-2010 because this split represents approximately when both major parties become nationally competitive in both congressional and presidential elections. Thus, I expect that any effect of community partisan extremity will be stronger from 1994 to 2010 than from 1980 to 1992.

Table 2.5: Linear regression coefficients with standard errors. Dependent variable is local modularity. Key independent variable is community partisan extremity. Electoral year fixed effects are included in the regressions, but never reach significance, and are not shown here.

| | Direct Connections | | | | Shared Individuals | | | |
| | *1980-1992* | | *1994-2010* | | *1980-1992* | | *1994-2010* | |
	Coeff.	S.E.	Coeff.	S.E.		Coeff.	S.E.		Coeff.	S.E.	
Partisan Extremity	0.129	0.099		0.530	0.083	***	0.761	0.128	***	0.795	0.091	***
Democratic	0.203	0.050	***	0.082	0.043	.	-0.293	0.140	*	-0.000	0.125	
Republican	0.140	0.047	**	0.090	0.044	*	-0.388	0.144	**	0.052	0.142	
Unaffiliated	-0.059	0.140		-0.087	0.047	.	-1.108	0.617	.	0.074	0.093	
Corporate	-0.043	0.060		-0.144	0.047	**	-0.315	0.124	*	0.084	0.070	
Labor	-0.020	0.091		0.001	0.073		-0.052	0.246		0.354	0.133	**
Membership Org.	0.057	0.065		-0.058	0.100		-0.276	0.149	.	0.123	0.152	
Trade Assn.	-0.066	0.074		-0.220	0.065	***	-0.286	0.130	*	-0.011	0.083	
ln(Size)	-0.018	0.006	**	-0.027	0.005	***	0.008	0.010		0.012	0.009	
(Intercept)	0.643	0.069	***	0.573	0.057	***	0.446	0.129	***	0.078	0.087	
Adjusted R^2	0.230		0.422			0.228			0.336		
Observations	434		608			157			223		

Significance codes ($p <$): *** 0.001, ** 0.01, * 0.05, . 0.1.

The results of these regressions are presented in Table 2.5. In the DCON networks we find, consistent with expectations, that community partisan extremity is significantly associated with local modularity, in the 1994-2010 data, but not in the 1980-1992 data. This finding indicates that communities in the 1994-2010 networks are more likely to be internally cohesive to the extent that they also exhibit extreme partisanship, strongly indicating that donor communities became more polarized over this period than in the preceding period. Interestingly, in the 1980-1992 data, we find that the proportion of Democratic and Republican nodes in a community each have a significant and positive impact on local modularity, while the partisan extremity of a community does not. This finding implies the presence of communities in the 1980-1992 DCON networks that are both bipartisan and highly modular. In the 1994-2010 data, when community partisan extremity reaches significance, we see that the coefficients for proportions of Democratic and Republican nodes drop substantially, with the proportion of Democratic nodes losing significance. Meanwhile, the coefficient for the key independent variable skyrockets. These changes suggest that bipartisan communities began to disappear once the parties began competing for congressional majorities. It is also worth noting that, in the 1994-2010 regression, the proportion of corporate PAC and trade association PAC nodes in a community become significantly and negatively associated with local modularity, suggesting that these PACs begin to serve as connectors to other communities in an increasingly partisan community structure. Such a finding is consistent with these PACs hedging their donations, perhaps due to uncertainty over which party would control government after any given federal election.

In the SID networks, we find that community partisan extremity is significantly and positively associated with local modularity in both the 1980-1992 data and the 1994-2010 data, suggesting that individual donor behavior has consistently divided federal committees into highly modular, highly partisan camps. Curiously, we find that the proportion of Democratic and Republican nodes in the 1980-1992 data has a significant negative impact on local modularity, as do the proportions of corporate PACs, and trade association PACs. In the 1994-2010 data, however,

all of these effects fall away. This pattern is consistent with a scenario in which small and highly partisan communities in the 1980-1992 data yield to larger and still highly partisan communities in the 1994-2010 data. This story is consistent with the finding in Table 2.4 that Democratic and Republican nodes in the SID networks come to occupy fewer communities over time, and the finding in Figure 2.6 that Democratic and Republican community partitions begin to more closely resemble a hypothetical partition in which major party node sort completely into two mega-communities.

2.5.3 Participation Score, Within-Community Degree, and Node Roles

Within-community degree, the first of our node-level variables, measures how well-connected a node, i, is to other nodes in its community (Guimera & Amaral 2005b). It is calculated by counting the number of within-community edges including node i, κ_i, subtracting the mean number of within-community edges for all nodes in i's community, $\overline{\kappa}_C$, and dividing by the standard deviation, θ_C. The result is a z-score, with mean of 0 and standard deviation of 1, which allows the within-community degree of each node i to be compared across communities. Nodes with high within-community degree have many more intra-community connections than is average for their community, and therefore may be considered hubs of their community. Correspondingly, nodes with low within-community degree are connected to comparatively few members of their community, and occupy peripheral positions.

The companion measure to within-community degree is *participation score.* While within-community degree captures the level of connectivity that each node i has with its community, participation score measures how widely i 'participates' in the network as a whole by calculating how uniformly that node's links are distributed throughout the other communities in the network. Nodes with connections to many communities other than their own have high participation scores, while those with few or no outside connections have low participation scores. Participation score is defined by the equation $P_i = 1 - \sum_{c=1}^{N}(\kappa_{ic}/k_i)^2$, where N is the

number of communities, κ_{ic} is the number of links node i shares with community c, and k_i is the total degree of node i (Guimera & Amaral 2005b).

Table 2.6: Node role typology as defined in Guimera and Amaral (2005a).

Hub Roles (Within-community Degree ≥ 2.5)	
P-Score	Role Name
$p \leq 0.3$	Provincial Hubs
$0.3 < p \leq 0.75$	Connector Hubs
$0.75 < p$	Kinless Hubs

Non-Hub Roles (Within-community Degree < 2.5)	
P-Score	Role Name
$p \leq 0.05$	Ultra-peripheral Nodes
$0.05 < p \leq 0.62$	Peripheral Nodes
$0.62 < p \leq 0.8$	Non-hub Connectors
$0.8 < p$	Non-hub Kinless nodes

Guimera and Amaral (2005b), the authors of participation score and within-community degree, apply their measures to a series of simulated and real-world networks. They find that nodes in these networks tend to cluster in certain areas of the two-dimensional parameter space formed by the measures. Based on this finding, the authors define a set of seven discrete *node roles* by which the nodes in any given network may be classified. They begin by dividing nodes into two groups: hubs and non-hubs. Hubs nodes are those with within-community degrees of 2.5 or greater, while non-hubs are those with within-community degrees less than 2.5. Subsequently, they divide hub nodes into three categories, and non-hub nodes into four categories, based on their participation scores. The resulting node role typology is described in Table 2.6. Figures 2.11 and 2.12 present scatterplots of participation score and within-community degree for the DCON and SID networks.

The node role typology of Guimera and Amaaral (2005b) allows us to evaluate several implications derived from earlier sections of this paper. First, let us consider some basic implications of increased major party electoral competition. We have already observed increases in transitivity, increases in density, and decreases in average path length between nodes that are consistent with a story of increasing partisan competition. Under these conditions, and especially under the constraints posed by campaign finance law, we should expect to see increases in network connectivity driven by increasingly powerful party organizations and by
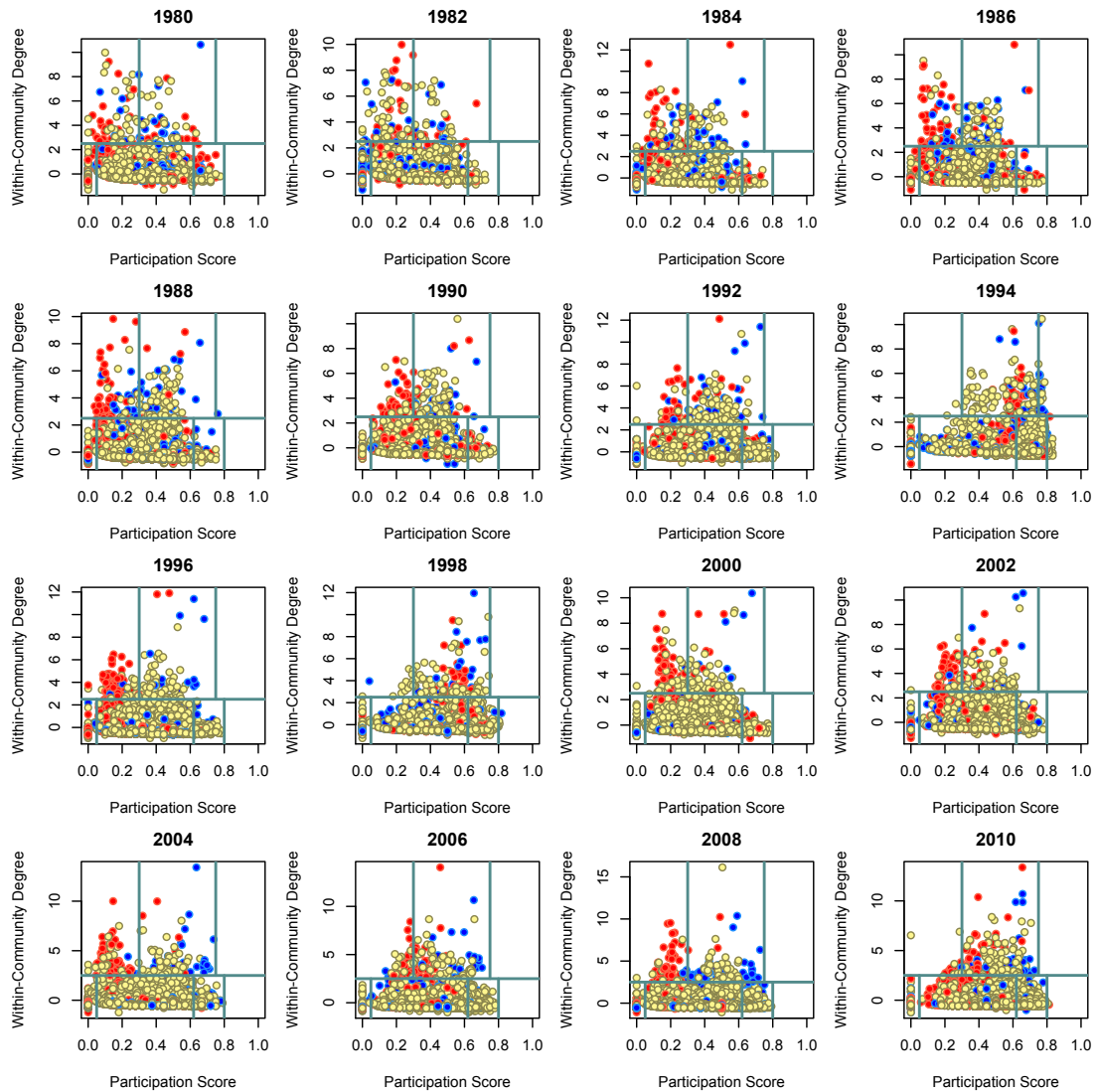
Figure 2.11: [Color online] Scatterplots of participation score and within-community degree for the DCON networks. Republican nodes are in red. Democratic nodes are in blue. All other nodes are in khaki. Gray lines divide the parameter space according to the node role typology of Guimera and Amaral (2005*a*).
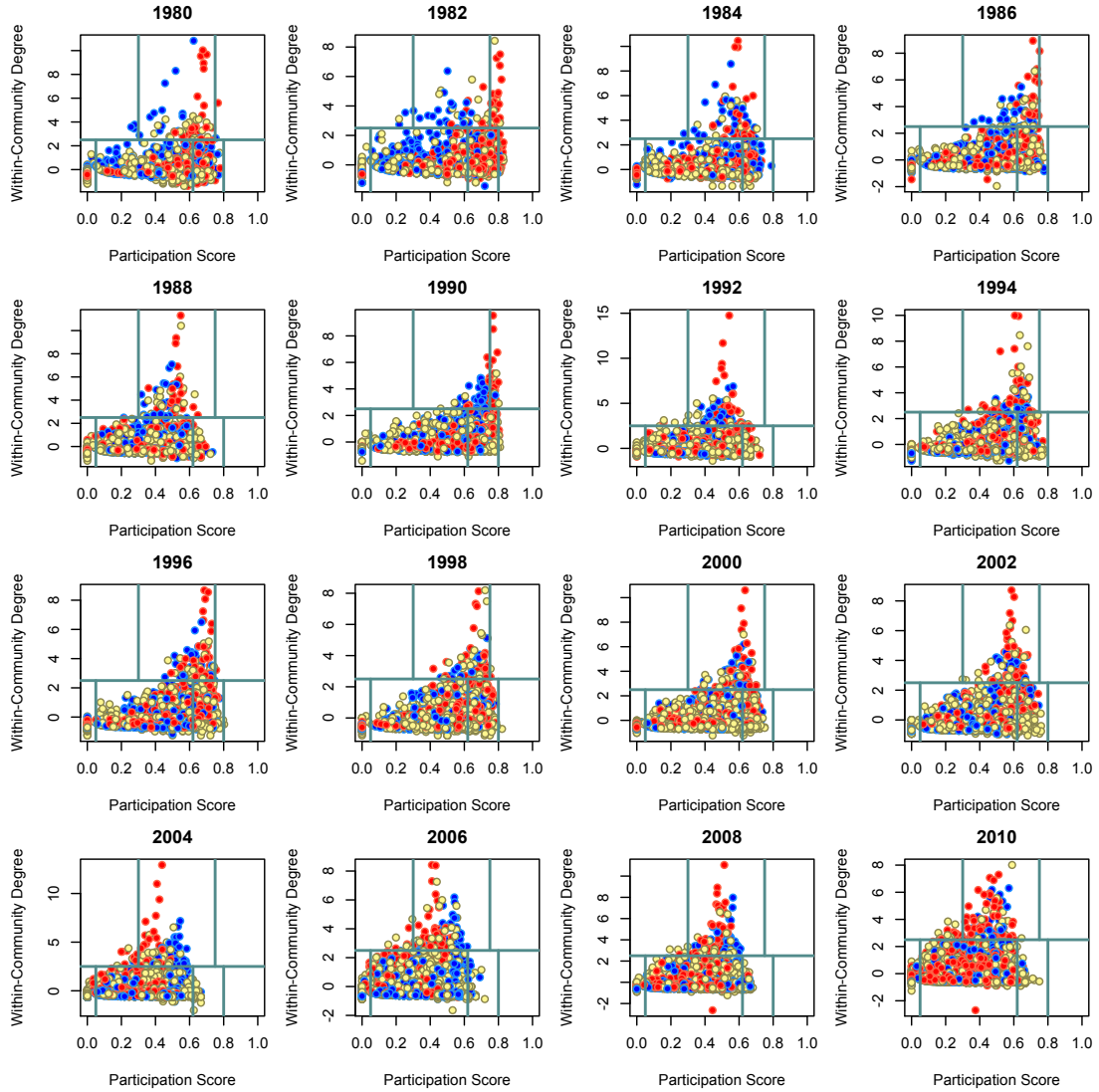
Figure 2.12: [Color online] Scatterplots of participation score and within-community degree for the SID networks. Republican nodes are in red. Democratic nodes are in blue. All other nodes are in khaki. Gray lines divide the parameter space according to the node role typology of Guimera and Amaral (2005*a*).

the emergence of unaffiliated PACs such as Leadership PACs. These are the committees that bear the costs of locating potential individual and committee doors, and ideally help coordinate their contributions to other deserving campaign and party committees. As such, we should expect to observe more of these nodes becoming *hubs* in their donor communities, and we should expect to see them becoming more connected relative to other hubs, as measured by within-community degree.

Figure 2.13 presents hub counts for the DCON and SID networks, broken down by selected node types. From these plots, it is immediately apparent that campaign committees belonging to House general election candidates account for nearly all of the growth in donor community hub counts from 1980 to 2010. On face, this result is unsurprising. We expect campaign committees to have particularly high numbers of connections because they are the primary targets of campaign contributions from other committees in the networks. It is unclear from these plots, however, what this finding tells us, if anything, about the state of factionalization in the major parties. In order to gain some traction on this question, we disaggregate these House committee hubs based on political party and the incumbency status of the candidates they represent. These breakdowns are presented in Table 2.7, and provide two potentially important findings. First, the lion's share of House committee hubs belong to incumbents, and second, in nearly every electoral cycle, there are substantially more Republican hubs than Democratic hubs.

The large number of incumbent hubs is perhaps unsurprising given the demonstrated fundraising benefits associated with incumbency. However, it is important to note that these committees may have acquired their status as hubs for a few reasons. One reason an incumbent committee may become a hub is due to electoral vulnerability. We expect vulnerable incumbents to engage fervently in campaign fundraising in an effort to ward of quality challengers (Jacobson 1989), and we similarly expect party organizations to leverage their fundraising networks to protect their vulnerable caucus members (Jacobson 1985-1986). Each of these activities could have the effect of increasing the number of incumbent hubs in the donor communities. However, it is also possible that non-vulnerable incumbents

Hub Counts by Node Type, DCON Networks

Hub Counts by Node Type, SID Networks
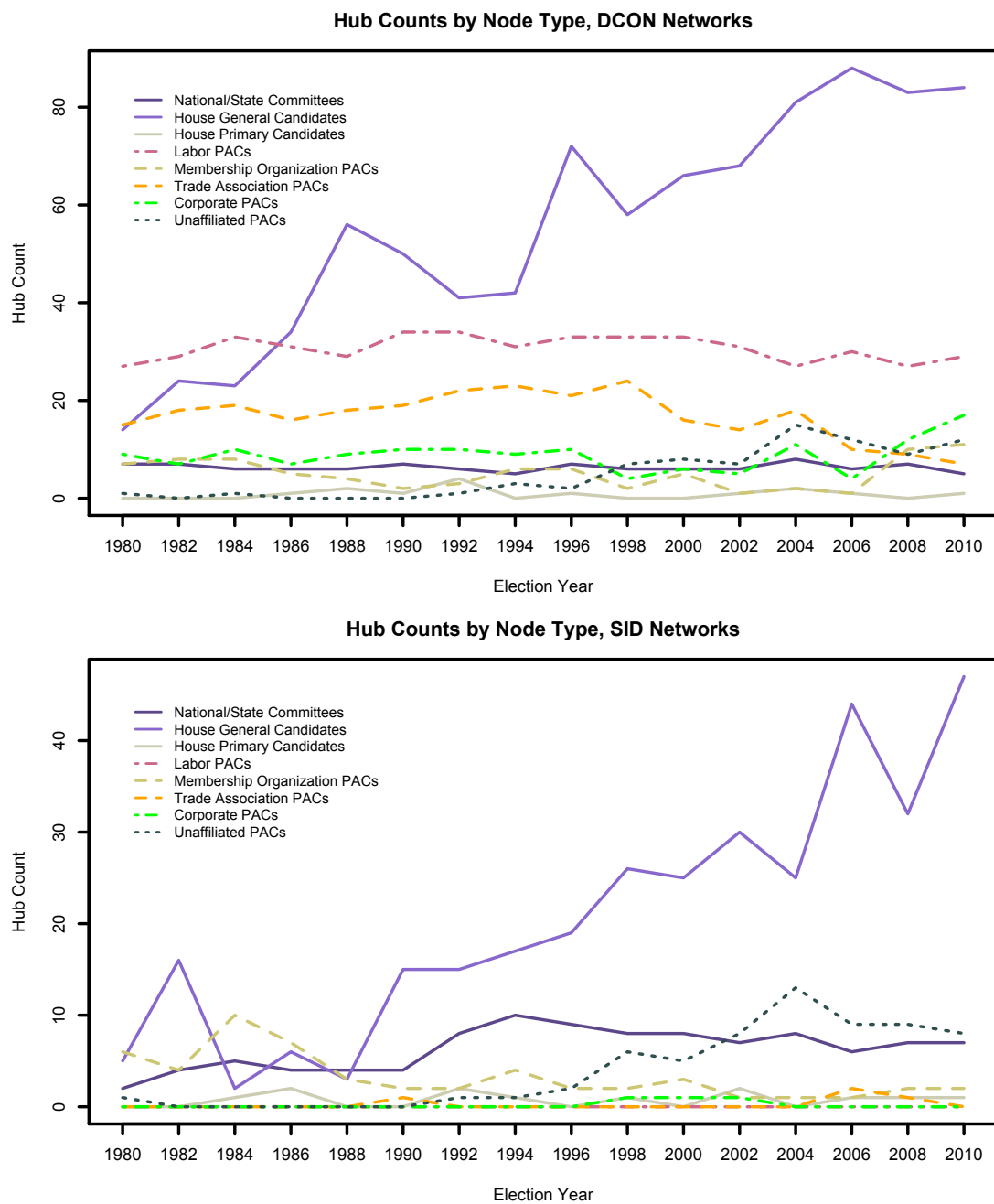
Figure 2.13: [Color online] Hub counts for DCON (top) and SID (bottom) networks, by node type.

Table 2.7: General Election House Candidate Hubs by Party and Incumbency Status. *I* represents incumbents, *C* represents challengers, and *O* represents open seat contestants.

	Direct Connections						Shared Individuals					
	Dems			*Reps*			*Dems*			*Reps*		
	I	C	O	I	C	O	I	C	O	I	C	O
1980	4	0	0	3	5	2	3	0	0	0	2	0
1982	4	0	0	18	1	1	4	1	0	6	3	2
1984	7	0	0	15	1	0	1	0	0	1	0	0
1986	14	0	0	19	0	1	3	0	0	3	0	0
1988	28	0	0	28	0	0	3	0	0	0	0	0
1990	20	0	0	30	0	0	10	0	1	4	0	0
1992	19	0	0	21	0	1	8	0	2	3	1	1
1994	21	0	0	21	0	0	9	0	1	2	2	3
1996	10	1	0	59	0	1	6	0	1	11	0	1
1998	16	0	0	35	3	4	4	1	0	19	1	1
2000	17	1	0	37	2	9	4	2	1	13	3	2
2002	13	0	1	50	1	3	5	1	0	18	0	6
2004	18	1	2	57	1	2	10	0	1	12	1	1
2006	17	9	4	55	0	3	8	4	3	28	0	1
2008	38	0	5	39	0	1	15	0	1	14	1	1
2010	48	0	0	32	3	1	16	1	1	14	11	4

would attempt to develop robust donor networks in order to increase their standing within their party in the form of choice committee assignments and leadership positions (Heberlig 2003, Heberlig, Hetherington & Larson 2006). Finally, it is possible that some non-vulnerable incumbents view themselves as outsiders to the party establishment and see fundraising as a mechanism to insulate themselves from the demands of party leaders. In order to separate these motives, however, we will need to examine whether the incumbent hubs come from safe or vulnerable members.

In Table 2.8, I divide incumbent House candidate hubs into "safe" and "vulnerable" categories using district-level presidential vote shares as a proxy for district competitiveness. Hubs are considered vulnerable if their party's candidate received less than 40% of the two-party vote in their district in the most recent presidential election. When the incumbent hubs are divided in this manner, it becomes clear that, in most electoral cycles, the majority of hub nodes represent vulnerable incumbents. Looking at the DCON networks, however, we also see clear evidence that Republican incumbent hubs frequently represent safe House members. Aggregating across all electoral cycles, we find that only 19.2% (58/294)

Table 2.8: Incumbent House Candidate Hubs by Party and Vulnerability. Incumbents are deemed vulnerable if their party's candidate received less than 40% of the two-party vote in their district in the most recent presidential election.

	Direct Connections				Shared Individuals			
	Dems		*Reps*		*Dems*		*Reps*	
	Safe	Vuln	Safe	Vuln	Safe	Vuln	Safe	Vuln
1980	0	4	2	1	0	3	0	0
1982	2	2	6	12	1	3	2	4
1984	0	7	10	5	1	0	1	0
1986	2	12	16	3	1	2	2	1
1988	3	25	12	16	2	1	0	0
1990	0	20	16	14	1	9	4	0
1992	3	16	7	14	0	9	2	1
1994	6	15	11	10	2	7	1	1
1996	4	6	6	53	1	5	2	9
1998	4	12	4	31	0	4	2	17
2000	2	15	10	27	0	4	4	9
2002	1	12	14	36	2	3	3	15
2004	2	16	18	39	6	4	4	8
2006	2	15	15	40	3	5	5	23
2008	13	25	7	32	7	8	3	11
2010	14	34	12	20	4	12	2	12

of Democratic incumbent hubs come from districts that are safe using the 40% presidential vote definition. On the Republican side, however, 32.0% (166/519) of hubs come from safe districts. We not only find that Republican House incumbent hubs substantially outnumber their Democratic counterparts, but they also are far more likely to represent relatively safe members. This could be evidence that Republican incumbents in the House value fundraising as a mechanism for advancement within the party, which would be consistent with the conventional understanding of Republican party organization outlined above. However, it could also be evidence of Republican incumbents attempting to develop the necessary fundraising networks to insulate themselves from the demands of party leaders and perhaps develop factions to compete for control of the party.

These competing scenarios offer differing implications for the connectivity of incumbent House member committees relative to the connectivity of the national party organizations. In the case that safe incumbents are utilizing fundraising as an opportunity to advance within the party, we would expect that these incumbents would encourage their donors to also contribute to their national party committees. This would have the effect of amplifying the within-community de-

gree of the national committees. On the other hand, if incumbents are developing independent bases of donors with which they intend to buck the party, we would expect to see the within-community degrees of incumbent members increase relative to those of the party committees. In Figure 2.14, I present plots of the mean within-community degrees for national party organizations, safe incumbents, vulnerable incumbents, and unaffiliated PACs that are hubs in the DCON (top) and SID (bottom) networks.

From this figure, it is apparent that hub nodes belonging to Republican incumbents in the DCON networks have not consistently or substantially improved their within-community degree relative to their national party committees over time. The same is true for Democratic incumbent hubs and their national committees. The within-community degree scores for the national committees consistently dwarf those of their House counterparts, with the notable exception of 1998 for the GOP. This suggests that hub committees in the DCON networks belonging to incumbent House members are not, in general, putting themselves in better position to threaten the national committees. Quite the opposite, it may well be the case that increasingly successful national committee fundraising is funneling new sources of campaign cash to House incumbents' committees, making them increasingly likely to appear as hubs in the DCON networks.

Meanwhile, the bottom panel of Figure 2.14 similarly shows a large gap between the within-community degree scores of national committees as opposed to House incumbent hubs. Additionally, we see large increases in within-community degree for both parties' national committees in 2004, presumably as they expand their individual donor networks in response to BCRA. From 2004 to 2010, however, the national committees of the two parties encounter differing fortunes. Republican national committees over this period show continual decline in within-community degree, while Democratic committees remain stable. The declining connectivity of the Republican committees over this period may suggest decreased willingness on the part of individual donors to contribute to the national party, a phenomenon which may ultimately weaken the ability of the GOP to induce cooperation from its congressmen and ideologically-sympathetic outside groups.
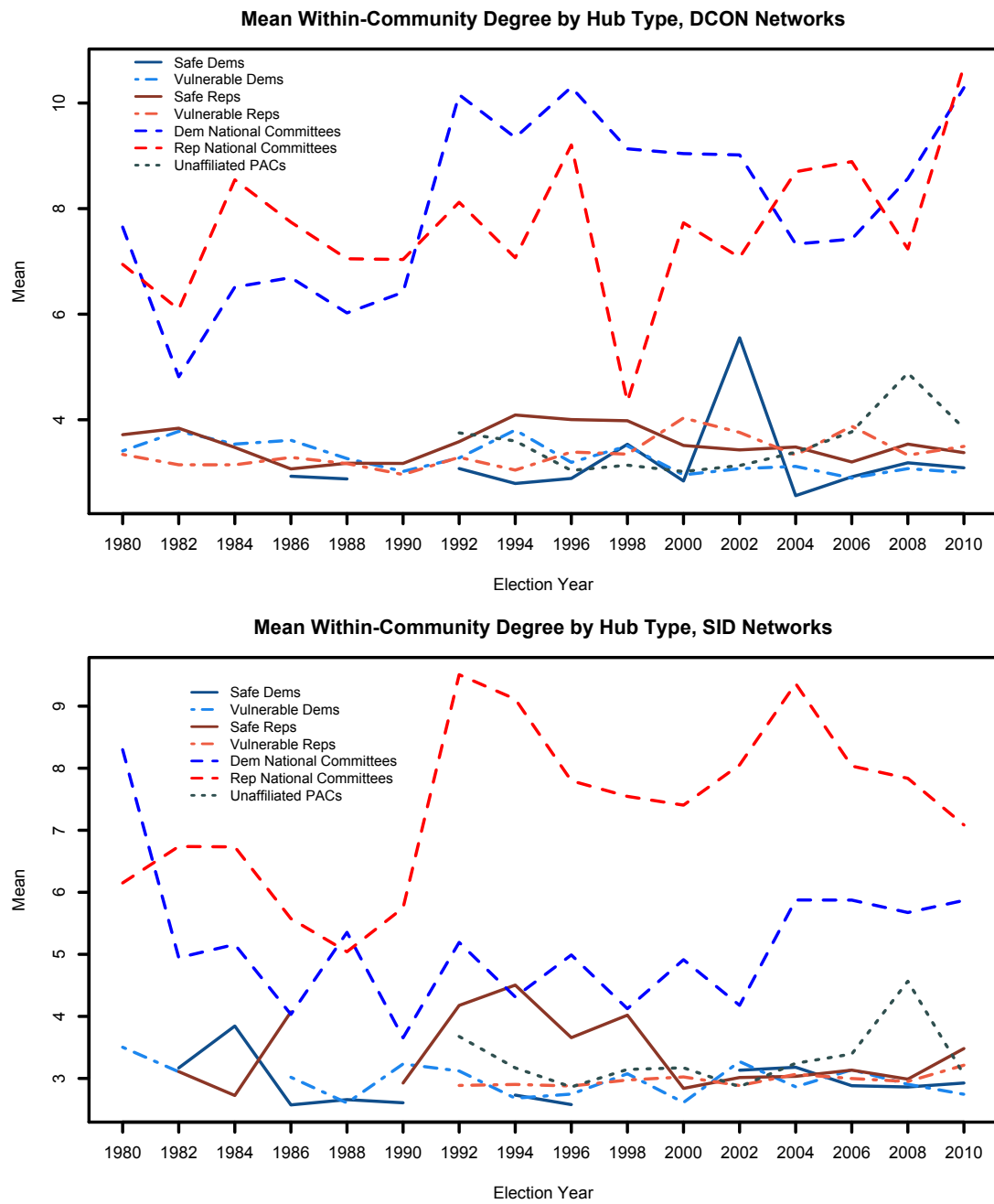
Figure 2.14: [Color online] Mean within-community degree scores for hub nodes in the DCON (top) and SID (bottom) networks.

Finally, we also note in Figure 2.14 that unaffiliated PAC hubs increased their average within-community degree substantially in both the DCON and SID networks over the period from approximately 2002 to 2008, before appearing to weaken in 2010. Despite their increasing connectivity within their communities, however, unaffiliated PACs do not approach the strength of the national party organizations. Moreover, when we examine the effects of unaffiliated PACs on the local modularity of donor network communities, as presented in Table 2.5 and discussed in Section 2.5.2, we find no significant results. Taken together, these results suggest that unaffiliated PACs, at least through 2010, have primarily served the interests of the major parties, rather than instigating factional divisions. Nevertheless, it remains the case that unaffiliated PACs provide powerful congressional incumbents and deep-pocketed party supporters with the opportunity to develop factional coalitions to rival the formal party organizations, especially since the ascension of Super PACs in the 2012 election, which is not covered by these data.

2.6   Conclusion

In this chapter, I have taken advantage of an underutilized and massive set of data – itemized contribution records from the FEC – and used it to construct networks of campaign finance activity for each federal electoral cycle from 1980 to 2010. I defined and assembled two different network types: one of direct connections between federally registered political committees, such as party organizations, principal campaign committees, and political action committees; and one of shared individual donations between those same committees. These networks offer tremendous potential for the development and testing of novel hypotheses about the interactions between different types of actors in the campaign finance ecosystem, and the effects that these interactions have on phenomena of substantive political interest, such as partisan polarization. The analyses presented here offer a mere glimpse of that potential, but nevertheless suggest exciting avenues for future research.

Network-level analyses, conducted in Section 2.3.1 offer compelling evidence

that campaign finance networks have become larger and more densely connected over time, especially since the mid 1990s when the two major parties, for the first time in decades, began to simultaneously compete for control of both the Presidency and control of Congress. These findings suggest that the political parties have responded to increased competition by engaging in a campaign finance arms race, doing everything within their power and within the constraints of campaign finance law to expand their party budgets by developing increasingly complex networks of individual and committee donors. Node-level analyses discussed in Section 2.3.2 corroborate this narrative, and further indicate that the developing complexity of campaign finance networks has been abetted by the meteoric rise of ideologically-driven 'unaffiliated' PACs.

Community detection analyses, conducted in Section 2.4 provide further evidence for the effects of increased party competition. Increases in network modularity in the shared individual donor networks over time suggest that the parties and their unaffiliated PAC allies have been increasingly successful at locating and driving contributions from highly partisan individual donors, resulting in increasing polarization in the donor communities of the two major parties. Meanwhile, modularity patterns in the direct connections networks indicate that contributions from PACs, especially those PACs affiliated with corporations and trade associations, have prevented donor communities in these DCON networks from becoming as polarized as those in the SID networks.

Analysis of detected community structures, presented in Section 2.5, provide still more evidence for the increasing partisanship of donor communities. Additionally, these analyses demonstrate the enduring strength of national party organizations, even in the face of increasingly powerful congressional incumbents, and a rising class of unaffiliated PACs. Given the potential for factionalization posed by powerful incumbents in candidate-centered elections, it is impressive to find that the national political parties remain as strong as they appear to be. These findings are a testament to the coordinating power of the party brand, and the unquestionable value of holding party majorities in Congress.

3   Assessing Party Organizational Strength and Integration

In the previous chapter, I employed itemized FEC campaign contribution records to assemble networks of campaign finance activity in United States federal elections from 1980-2010. The *direct connections*, or DCON, networks were defined by *edges* consisting of monetary transfers connecting *nodes* consisting of registered political committees, such as PACs, party organizations, and federal candidates. The *shared individual donor*, or SID, networks also featured registered political committees as nodes, this time connected by the presence of shared individual (as opposed to registered committee) donors. Analyses of the campaign finance networks conducted in the previous chapter produced several key findings and posed many intriguing questions about the evolving relationships between federal campaigns, party organizations, and their donors at both the committee and individual levels.

I found considerable evidence that campaign finance networks over time have grown larger and become more intricately connected. In both network types, the number of nodes, the number of edges, and the total weight of edges have steadily increased over the past 30 years, indicating the expanding size of the networks. Meanwhile, the increasing connectivity of the networks is evident in increased levels of transitivity among nodes, and the gradual shortening of average path lengths between nodes. The fact that the networks have not only expanded, but also become more connected, leads us to wonder which institutional features of American government might be incentivizing such developments. Evidence presented thus far has suggested two primary culprits: the advent of fierce national

competition between the two major parties, and the constraints presented by campaign finance laws themselves.

Campaign finance restrictions, I have argued, fundamentally alter the way that campaigns and parties are supplied with necessary cash. Caps on PAC and individual contributions mean that political groups cannot rely on essentially unlimited contributions from a small set of wealthy donors. Rather, in order to expand campaign coffers, these groups must expand their donor bases by eliciting contributions from a greater number of committees and a larger number of individual donors. These expansions are evident in the campaign finance networks: the dramatic increases in node counts and total edge weights are driven primarily by the addition of more PACs, most notably corporate, trade association, and highly-ideological 'unaffiliated' PACs. Campaign and party committee populations, by contrast, increase modestly and inconsistently over time.

Though campaign finance laws impact the supply of donations, I argue that the demand for donations is driven primarily by the level of inter-party competition over the main levers of institutional power: the Presidency and majorities in the House and Senate. Absent fierce inter-party competition, there is little incentive for parties and campaigns to expand their donor bases, as the money would provide no particular benefit, but would come with the cost of adding extra voices to party decision-making processes, potentially making coordination among fellow partisans more difficult. In the presence of fierce competition, however, the parties have the incentive not only to expand their networks in order to keep pace in the campaign finance arms race, they also have the incentive to invest in the development of organizational infrastructure and information technology that will mitigate some of the coordination problems that expanding donor networks are likely to present.

Many of the network diagnostics conducted in the previous chapter show evidence of substantial change during the early 1990s, a period in which the balance of power between the two major parties shifted dramatically. It was during this time period that the shifting allegiances of southern voters from the Democratic party to the Republican party finally bore fruit, handing the GOP unified control of Congress for the first time in decades. Similarly, this period saw the rise of

center-left, 'third way' politicians in the Democratic party, culminating in the presidential victories of Bill Clinton, and breaking decades of GOP dominance in the oval office. Thus both parties became competitive in congressional and presidential elections for the first time in post-war history, creating unprecedented demand for campaign funds and launching the quest to locate untapped contribution sources. The effects of this competition are seen most notably in the skyrocketing numbers of unaffiliated PACs in the campaign finance networks, the shocking change in the modularity scores of the DCON networks, and sharp increases in the partisanship of donor network communities. The observation of increasing partisanship in donor network communities is of particular interest here. On the one hand, it provides important confirmation that the expansion of donor networks is driven by a partisan process, as described above. On the other hand, it tells us very little about which actors, if any, are in a position to control that process.

Analysis of detected donor communities conducted in the previous chapter indicate, for example, that the number of incumbent House candidates occupying 'hub' positions within their communities has increased substantially over time, suggesting that incumbent candidates and their campaign committees have become increasingly important attractors for donations. This could be evidence of incumbent members acting in their own interests: developing independent support bases with the help of unaffiliated PACs and other allies with the intent of leveraging their fundraising prowess to increase their standing within the party hierarchy, or perhaps to subvert that hierarchy altogether by developing a new intra-party faction. However, it could also be evidence of effective coordination among fellow partisans: expanding and integrating donor networks in order to channel donations where they are needed, in the interest of serving the party's collective goal, in this case a congressional majority. Comparing the within-community degree of national party organization hubs to those of House incumbent hubs, we find evidence that national party organizations remain quite powerful relative to the campaign committees of their House members, suggesting that national party organizations play a substantial role in the coordination of partisan campaign finance communities. Additionally, analyses of revealed community structures indicate

that these partisan communities are becoming more similar to a hyper-partisan baseline, suggesting increased levels of partisan coordination, particularly in the SID networks.

Thus, we are left with evidence that candidate campaign committees have increased their standing in campaign finance communities over a period in which national party organizations appear to remain quite powerful and community structures overall are becoming more partisan. Traditionally, however, federal elections in the United States are thought to be 'candidate-centered' and party organizations are thought to have little institutional power to control the behavior of candidates and their campaigns. From this perspective, it is somewhat curious that we should find national party organizations occupying positions of such apparent strength. Though party organizations have been observed to be increasing in strength and capacity over the past several decades, most studies conclude that the parties use this capacity to provide campaign services to competitive candidates (Herrnson 2009), and explicitly not to induce greater coordination and cooperation among fellow partisans (Jacobson 1985-1986). Party organizations, according to candidate-centered theory, exist to deliver congressional majorities by any means necessary, and are essentially agnostic to the ideological differences between their candidates, preferring to allow any ideological disputes to be arbitrated by successful candidates once they reach Congress.

In Chapter 1, I proposed an alternate theory of party organizations and the role that they play in campaign finance. My theory has the capacity to explain why we should observe increasing partisan cohesion and connectivity in the campaign finance networks; phenomenon about which existing theory has little to say. Essentially, I argue that party organizations have an incentive not only to pursue congressional majorities, but also to facilitate the election of candidates who willingly cooperate with party leadership and coordinate with party organizations in order to enhance the party's positive agenda control powers. In addition to having the incentive to elect cooperative partisans, I further argue that party organizations, in their role as powerful hubs of the campaign finance networks, have the capacity to condition the environment in which federal elections take place,

encouraging ideologically-similar candidates to run, and directing well-coordinated donor bases to support those candidates.

This theory has several testable implications. First, it implies that national party organizations occupy dominant positions in the campaign finance networks. We saw some evidence of this in the analysis of national committee hubs in the previous chapter; in Section 3.1, I provide a number of other measures indicating the same result. Second, the theory implies that other party committees, particularly state committees, should become more organizationally strong and more integrated with the national committee, in the sense that their bases of shared donors should increase over time. In Sections 3.2 and 3.3.1, I use data from the campaign finance networks to develop new measures of party organizational strength and national party integration at the state level, and demonstrate that state party committees have for the most part become stronger and better integrated with their national party committees over time. The final implication, of course, is that these organizational activities should result in more House candidates who are better integrated into the party donor base, resulting in higher likelihood of electoral success and and higher levels of cooperation with party leadership once they reach office. These implications are pursued in the next chapter.

3.1   The Centrality of Party Organizations

In this section, I present a measure of national party committee *centrality* in the DCON and SID campaign finance networks. The purpose of these analyses is to assess the changing relevance of national party organizations in campaign finance networks over time. Based on evidence presented in the previous chapter, and the literature review and theory presented in the introductory chapter, I expect to find that national party committees have become increasingly central to campaign finance networks over time.

A secondary purpose of these analyses is to evaluate the relative centrality of various classes of partisan actors in the campaign finance networks, in particular national committees, state committees, and House candidates. Changes in

the relative centrality of these actors could have repercussions for the ability of parties to effectively coordinate at the national level. For example, if we find that House candidates have dramatically increased their centrality relative to party organizations, this may be an indication that party organizations have become less desirable as a target to congressional campaign donors, and may have the effect of dividing national parties into factions with relatively independent financial support bases. Ultimately, such factionalization in donations may result in the party electing a House caucus that is substantially divided, increasing the likelihood of coordination failures among fellow partisans, and reducing the ability of the party in government to successfully pursue a positive agenda.

The network centrality measure I consider is *betweenness centrality.* In order to effectively define betweenness centrality it is first necessary to consider the concept of *shortest path length.* Recall from Chapter 2 that the path length between two nodes, i and j, is equal to the number of edges necessary to connect them. So, if i and j are directly connected, their shortest path length is 1. If the nodes are connected only through an intermediary, k, their shortest path length is 2, and so on. Let us consider this latter case where i and j are connected through node k, or, $i \leftrightarrow k \leftrightarrow j$. In this case, according to network science terminology, node k is between nodes i and j. Betweenness centrality expands this simple concept by counting the number of times a given node, for example k, lies on the shortest path between all other node pairs. Nodes with high betweenness centrality are therefore those nodes that frequently connect nodes in the network that would otherwise be unconnected.

This, as it happens, is precisely the role that the literature, my theory of party organizations, and the evidence from the previous chapter says party organizations should be playing. Party organizations, especially at the national level, should be in the business of developing donor bases and connecting them with deserving and needy campaign committees, state committees, and other sympathetic groups. In other words, party organizations should have a definite interest in having high betweenness centrality. Here, I use a weighted version of betweenness centrality, which takes into account not only the length of paths, but also

the strength of the edges along those paths. The version of betweenness centrality employed here is also normalized in a standard fashion, implemented in the *igraph* package in R (Csardi & Nepusz 2006), in order to make betweenness scores interpretable across networks with varying numbers of nodes.

In Figure 3.1, I present the mean quantile rank of the betweenness scores for Democratic and Republican national committees, state committees, and general election House candidates in the DCON (top panel) and SID (bottom panel) networks. The quantile rank plots allow us to examine the relative centrality of these partisan node classes over time. From these plots, it is obvious that the national party committees have, as expected, occupied dominant positions in both campaign finance networks for much of the past 30 years. Meanwhile, however, the betweenness ranks of state party committees and House candidates have shifted in fairly intriguing fashion. In the DCON networks, we observe that these node classes saw substantial declines in their betweenness ranks from about 1994 to about 2006, corresponding more or less to the period in which the Republicans controlled the House of Representatives, and in which national party competition was strong. The declining rank of House candidates and state committees may reflect the increasingly nationalized nature of party activity, as has been documented in the literature, or may be a function of the increasing power of non-party committees who have become substitutes for the organizing power of state parties. Interestingly, the fortunes for state party committees, particularly in the Democratic party case, change dramatically after 2004, perhaps reflecting the renewed importance of state parties in organizational activity after the passage of BCRA in 2002.

In the SID networks, we again see the national party committees consistently occupying dominant positions, but here we see the quantile rankings of House candidates and state committees increasing steadily over the course of the time series. This finding suggests that House candidates and state committees have become increasingly successful, relative to other actors in the SID networks, at connecting other nodes via shared individual donors. This result is consistent with the theory presented in Chapter 1, which suggests that one of the primary
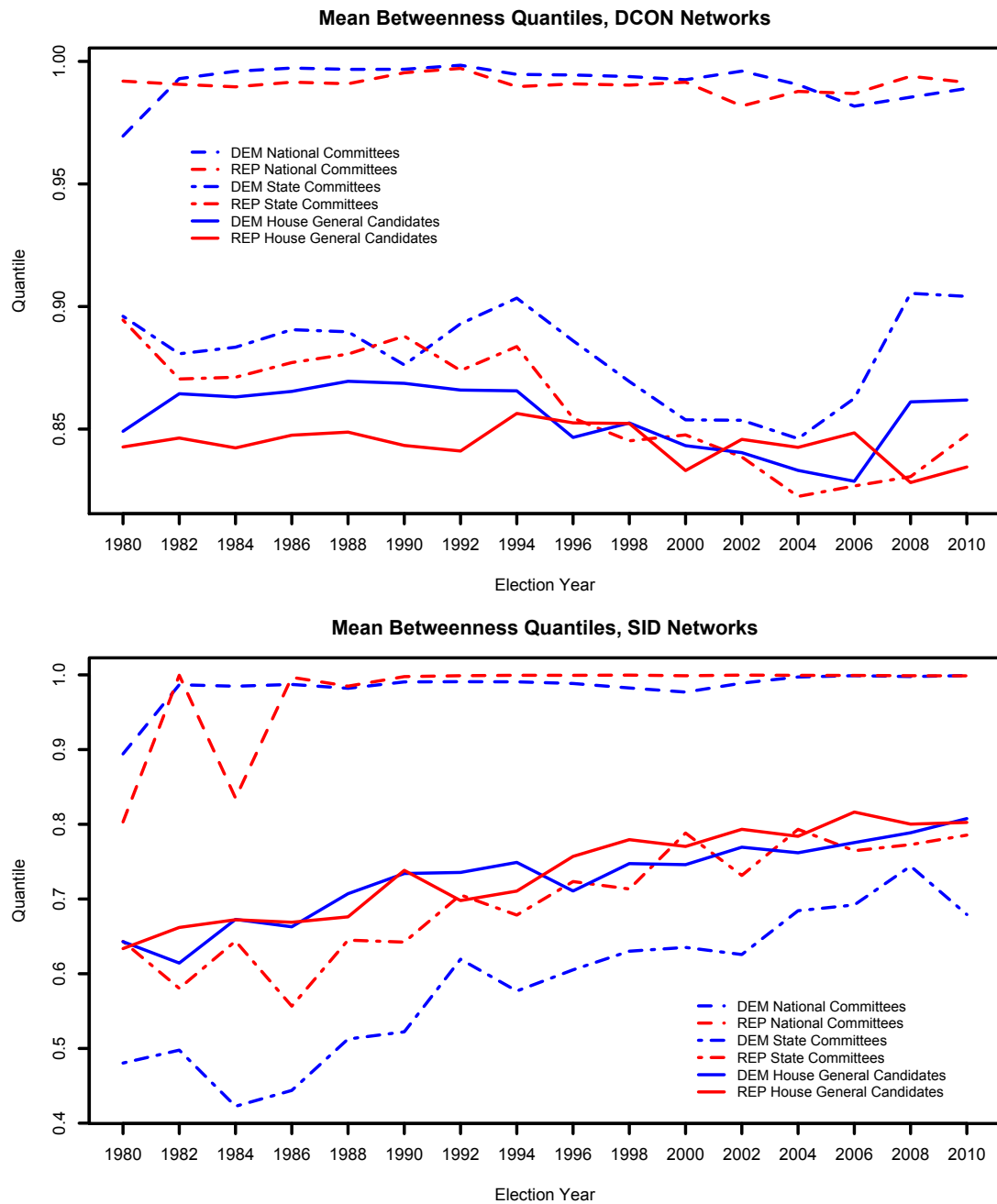
Figure 3.1: [Color online] Mean betweenness centrality quantiles for National Party Committees, State Party Committees, and House General Election Candidates in the DCON (top) and SID (bottom) networks.

roles of the state party committees is to assist in the broadcasting of highly ideological messages to encourage brand differentiation from the opposing party. We saw substantial evidence in the previous chapter that communities in SID networks have become particularly partisan over time, much more so than in the DCON networks. Here it becomes clear that the increases in partisanship in those communities is associated with the increasing relative centrality of partisan actors in the SID networks. This makes sense given that the state committees and House candidates have a distinct advantage over the national committees in the hunt for more individual donations. Lower-level committees have more in-depth knowledge about the characteristics of their geographic regions, and are therefore likely to have an important role both in locating new donors and in tailoring national party messages to appeal to those donors.

It is particularly fascinating that we find betweenness rank among these actors to be increasing in the DCON networks while it is declining in the SID networks. This opens the possibility that the decline in rank in the DCON networks reflects a strategic decision on the party of party committees and candidates to focus more heavily on the development of ideological individual donor support bases. Given the decreased costs of targeting individuals and transmitting ideological messages to them, it is reasonable to expect that the parties would make such a decision. Furthermore, as discussed earlier, one of the primary advantages of ideological individual voters, as opposed to, say corporate PACs, is that ideological individual donors do not have narrowly defined economic interests. This is especially true for the class of individuals whose donations comprise the SID data: individuals who contribute at least $250 to 2 or more committees.

These individuals benefitted the most from the rise in American wealth and corresponding increase in leisure time noted by several authors (Wilson 1966, Schlesinger 1991, McCarty, Poole & Rosenthal 1997). Lacking pressing economic concerns, these individuals are more free to pursue ideological motives in the political arena, and political parties, wanting to generate increased donations without having to make concrete policy concessions, are likely to prefer donations from these individuals, and are likely to invest in the organizational capacity to locate

and motivate them. In this context, it is intriguing to find the surge in the be-tweenness rank of Democratic state committees in the DCON networks that we observe from 2004-2010. Scholars have long been in agreement that the Republi-can party has proven more successful in driving its ideological base ever rightward, to the extent that many Republican supporters have become unflappable even in the face of the demonstrable policy failures of the George W. Bush administration (Jacobson 2006). It is possible that the increasing rank of Democratic state com-mittees reflected a shift in the assessment of economically-motivated PACs about the relative value of supporting an increasingly ideological Republican party whose voters and donors were no longer responsive to the success of policy.

The analysis of the betweenness score quantiles of national committees, state committees, and House candidates provides us with further evidence that national party committees are the dominant figures in campaign finance networks. The changes in these quantiles over time also suggest a declining role for state committees and House candidates in connecting committees together in the DCON networks, with the recent exception of Democratic state committees, and, to a lesser extent, Democratic house candidates. Meanwhile, evidence from the SID networks suggests the increasing importance of both House candidates and State committees in both parties, a finding that is consistent with a world of increasingly ideological and partisan individual donation behavior, and the important role that state committees and House candidates have to play in it.

In order to get a better understanding of the changing roles and strengths of the state party committees, I proceed in the next section to develop measures of state party organizational strength and integration, and use them to explore the relationship between organizational activity, political competition, and ideological extremity.

3.2 Measuring Party Organizational Strength in the States

In this section, I present a new measure of party organizational strength for state party committees. I derive this measure from campaign finance data provided by the FEC as well as measures of state party committee centrality in the DCON and SID campaign finance networks. Before presenting the measure itself, I begin by reviewing the brief history of party organizational strength measures in the political science literature.

3.2.1 Existing Measures

As I discussed in Chapter 1, the measurement of party organizational strength has been hampered by a perceived lack of available data from which the concept of organizational strength might be extracted. Additionally, I argue that the perceived lack of theoretical importance of party organizations has had the effect of suppressing demand for the development of new measures. In the literature on state party strength, I was able to locate only one measure that uses multiple variables to create a composite organizational strength score (Cotter, Gibson, Bibby & Huckshorn 1984). Other studies have estimated party organizational strength using proxy variables, for example Jewell and Morehouse (2000), who estimate party organizational strength as the magnitude of the primary vote received by party gubernatorial candidates.

The most complete measure of state party organizational strength was developed by Cotter et al. (1984). Cotter et al. assembled their measure using data collected from mail surveys sent to former state party chairmen and supplemented by interviews conducted with a sample of state party chairmen and executive directors. They use these data to estimate state party organizational strength over four time periods: 1960-1964, 1965-1969, 1970-1974, and 1975-1980 (Cotter et al. 1984:15). Their measure was later replicated by Aldrich (2000), providing updated estimates of state party strength for the turn of the century. No data exist to cover the period from 1980 to 1999.

Cotter et al. conceptualize party organizational strength according to a model of bureaucratic complexity adapted from the work of Max Weber (Weber 1946). They propose that a party organization may be considered strong to the extent that it exhibits *organizational complexity* and *programmatic capacity*. They identify complex organizations as those that have "an enduring headquarters operation with leadership, staff, and budget" in which "responsibilities, obligations, and tasks associated with positions are clearly defined" (Cotter et al. 1984:14). The authors identify programmatic capacity as any activity "which generates support for the organization and provides the party with a *raison d'etre*" (Cotter et al. 1984:19). They further subdivide programmatic activity into two sub-concepts: *institutional support activity* and *candidate-directed activity*. The authors identify key features of party organizations associated with each of these concepts. These are presented in Table 3.1.

Table 3.1: Conceptualization of party organizational strength as presented in Cotter et al. (1984)

Party Organizational Strength
Organizational Complexity
- Accessible Party Headquarters
- Bureaucratized Division of Labor
- Stable Budget
- Professionalized Leadership Positions
Programmatic Capacity I: Institutional Support Activity
- Fundraising
- Electoral Mobilization
- Public Opinion Polling
- Issue Leadership
- Publication of a Newsletter
Programmatic Capacity II: Candidate-Directed Activity
- Financial Contributions to Candidates
- Provision of Services to Candidates
- Involvement in Candidate Recruitment
- Involvement in the Selection of Convention Delegates
- Preprimary Endorsements

The authors operationalize their concept of party organizational strength using survey responses from state party chairmen, from which they derive 12 index variables associated with key features of their concept. They then perform a factor analysis on these index variables and find that the variables collect into three factors. These factors map nicely onto their conceptualization of party organizational

strength. Due to the presence of correlations between the three factors, the authors proceed to conduct a higher-order factor analysis on the initial factor scores, which suggests the presence of a single higher-order factor. Cotter et al. (1984) demonstrate that the resulting factor scores correlate well both with the first-order factor scores and with the underlying index variables. The higher-order factor scores are therefore interpreted as an appropriate measure of party organizational strength.

The strength of the Cotter et al. (1984) measure derives primarily from its conceptual sophistication. The authors do a fine job identifying the key features of organizational strength and present a well-reasoned and theoretically-grounded map of the concept. Unfortunately, their operationalization relies exclusively on survey and interview data, meaning that our ability to estimate their measure is dependent on the ability of scholars to conduct surveys, the willingness of state party chairs to respond to those surveys, and the capacity of respondents to remember and accurately report answers to the survey questions. In the nearly 30 years since the initial publication of the Cotter et al. (1984) study, this survey design has been replicated only once, in 2000 (Aldrich 2000). The irregularity of state party chair surveys makes nuanced time-series analyses of party strength nearly impossible. Furthermore, even in the years for which data are available, the response rates of state party chairmen, while good for surveys in general, do not make it possible to estimate the organizational strength of all 100 state party committees in *any* of their four time periods. Of the 560 state chairmen who received surveys in the initial study, only 289 responded, leaving the authors unable to estimate organizational strength for many states in many time periods. In the 1975-1980 time period, for which Cotter et al. receive their most complete set of responses, 10 out of 100 state party organizations are absent.

3.2.2 Components of New Measure

In order to get a more complete picture of state party organizational strength over time, we require a regularly-updated, reliable data source that provides information on all 100 state party committees. The FEC, which has gathered and disclosed campaign finance data for every federal electoral cycle from 1980 to the

present, provides us with such a data source. Each of the state party committees is registered with the FEC, and regularly discloses summary information on federal campaign finance activity, and provides itemized reports of contributions from individuals and other political committees. Here, I demonstrate that these FEC data, and the campaign finance networks I have derived from them, may be used to estimate party organizational strength for every state party committee in every federal election cycle from 1980 to 2010.

When deciding which variables to include as components of this new measure, I attempt to follow as closely as possible the conceptual map of party organizational strength offered by Cotter et al. (1984) while also adopting insights from the theory of party organizations I outlined in Chapter 1. The variables that I select do not perfectly match the conceptual breakdown offered by Cotter et al., and may

I begin by considering the concept of organizational complexity. Cotter et al. operationalize this concept using survey questions that inquire about the number of staff at party offices, the presence of a permanent headquarters, the stability of the party budgets, and the division of labor among staff members (Cotter et al. 1984). Unfortunately, direct analogues for these variables are simply unavailable in the FEC data, and are not readily available in complete form from other sources. Unable to measure the complexity of the organizations directly, I instead consider how organizational complexity might be reflected in the positioning of the state parties within campaign finance networks.

I reason that strong state committees are those which are able to occupy more central positions in campaign finance networks, specifically the DCON networks of direct connections among political committees. Party organizations, in the context of federal elections, are in the business of developing and managing diverse coalitions of interests. Given the logistical difficulties inherent in maintaining such coalitions (Olson 1965), I believe it is reasonable to assume that only organizationally complex state committees will be successful in performing the task. It would be difficult for a state party to negotiate disputes among supporters if, for example, the party had no headquarters and no permanent paid staff. Thus, as

a proxy for more direct measures of organizational complexity, I employ variables that capture the ability of the state party committee to manage large coalitions of supporters. *Closeness centrality* in the DCON and SID networks indicates how many steps are required to connect the state committee to the other actors in the network. Strong organizations should exhibit higher levels of closeness centrality, as a result of their capacity to manage large coalitions. Similarly, a professionalized committee should be more successful in attracting a greater *PAC and individual contributors*

In measuring the institutional support activity of state party committees, Cotter et al. consider actions such as fundraising, voter mobilization efforts, opinion polling, issue leadership, and the publication of a newsletter. Though there are no obvious analogues to issue leadership or publication activities in the FEC data, we are able to estimate another reasonable operationalization for institutional support activity in the form of *contributions to other party committees*. Party organizations that are active participants in the expansion of their party should be observed to contribute greater amounts of money to larger numbers of other party committees, for example national committees, other state committees, or local committees. As a proxy for fundraising and electoral mobilization efforts, I employ variables related to the ability of party committees to attract donations from individual donors. Much as a strong party organization should be engaged in efforts to turn out voters on election day, a strong party organization should also be able to mobilize donors to contribute to the party cause. These efforts are measured by the *amount of PAC and individual contributions* received by the committee.

Finding an operationalization of candidate-directed activity is fairly straight-forward compared to the two prior sub-concepts. The FEC data capture the most essential form of candidate-directed activity: contributions to candidates. To measure this activity, I include both the *number* of federal candidates receiving contributions, and the *total amount* of contributions. Additionally, I include measures of *betweenness centrality* for the committees in the DCON and SID networks. Betweenness centrality measures the extent to which actors in a network connect

other actors who would otherwise be unconnected. We would expect to see high betweenness centrality among state party committees to the extent that they are serving to connect candidates to new sources of campaign financing. Thus, betweenness centrality serves as a proxy for services provided to candidates by the parties, which are not captured in the FEC data, except in the form of disclosed in-kind contributions. Unfortunately, there are no serviceable variables to proxy for the involvement of party organizations in the recruitment of candidates, selection of convention delegates, or the preprimary endorsement of candidates.

Table 3.2: Components of party organizational strength derived from FEC data and campaign finance networks.

Components of New Party Organizational Strength Measure
Organizational Complexity
- Closeness Centrality in SID Networks
- Closeness Centrality in DCON Networks
- Number of PAC Contributors
- Number of Individual Contributors
Programmatic Capacity I: Institutional Support Activity
- Total Amount of PAC Contributions
- Total Amount of Individual Contributions
- Number of Other Party Committees Receiving Contributions
- Total Amount of Contributions to Other Party Committees
Programmatic Capacity II: Candidate-Directed Activity
- Betweenness Centrality in SID Networks
- Betweenness Centrality in DCON Networks
- Number of Federal Candidates Receiving Contributions
- Total Amount of Contributions to Federal Candidates

A complete list of the variables that I employ is provided in Table 3.2. Some caveats are in order here. First, the fact that these variables are derived from data on federal elections means that nearly all activity related to state and local elections is not considered in this analysis. It may therefore be fair to say that these variables more effectively operationalize the strength of state party organizations *in federal elections*, than organizational strength in a general sense. Second, some of the key features of the Cotter et al. (1984) conceptual scheme are absent. Most notably, these variables offer no solid estimate of the candidate recruitment activity of party organizations. However, it is likely that candidate recruitment activity correlates well with several of the measures I have included. Additionally, the loss of particular variables and the concepts they represent must

be weighed against the gains provided by a measure that can be estimated for all state party committees in all electoral cycles.

3.2.3 Methods

Having reconciled the variables available to me via the campaign finance networks and other FEC data with the conceptual scheme offered by Cotter et al. (1984), I next proceed to reduce these variables into a single measure of organizational strength. Whereas Cotter et al. (1984) performed their analyses using exploratory factor analysis, I opt to employ principal components analysis instead. The primary difference in the methods is that principal components analysis considers the total variance of the included variables, while factor analysis considers only shared variance (Thompson 2005). I chose principal components analysis for the simple reason that I lack a substantive reason to restrict the analysis of my variables to their shared variance.

I performed my analyses using the *psych* package in R. First, I conducted a parallel analysis test (Horn 1965), which suggested that it would be appropriate to extract four components from my raw data. Next, I conducted the principal components analysis, extracting four components. Following Cotter et al. (1984:178), I chose a rotation method (in this case *oblimin*) that allowed the resulting components to be correlated with one another. The resulting component loadings are presented in Table 3.3.

Looking at the component loadings, it is clear that the emergent components do not fit precisely into the conceptual bins I had assigned them. Given the exploratory nature of this analysis, however, such a result is probably to be expected. The first component, $C1$, clearly reflects the ability of the party committee to attract donations from individual contributors, as it is most strongly influenced by SID Closeness, SID Betweenness, and variables measuring the number of individual contributors and the total dollar amount of individual contributions.

The second component, $C2$, is influenced primarily by SID closeness, DCON closeness, the number of PAC contributors, and the total dollar amount of PAC contributions. I anticipated the clustering of the first three of these variables in

Table 3.3: Component loadings for first-order principal components analysis of party organizational strength data.

Variable	$C1$	$C2$	$C3$	$C4$	h^2
SID Closeness	**0.42**	**0.52**	0.01	-0.18	0.55
DCON Closeness	0.07	**0.46**	0.34	**-0.43**	0.52
# PAC Contributors	0.01	**0.85**	0.02	0.01	0.74
# Individual Contributors	**0.87**	0.11	0.03	0.12	0.90
Total PAC Contributions	0.06	**0.71**	-0.15	0.21	0.60
Total Individual Contributions	**0.85**	0.08	0.02	0.06	0.81
# Other Committees Receiving	0.13	0.30	0.08	**0.61**	0.63
Total Sent to Other Committees	0.31	-0.07	0.04	**0.65**	0.59
# Candidates Receiving	0.16	-0.13	**0.78**	0.09	0.68
Total Sent to Candidates	-0.05	0.02	**0.67**	-0.10	0.44
SID Betweenness	**0.84**	-0.13	0.05	-0.08	0.66
DCON Betweenness	-0.25	0.28	**0.40**	**0.45**	0.49
Proportion of Variance	0.23	0.17	0.12	0.11	
Cumulative Variance	0.23	0.40	0.52	0.63	

Table 3.2, arguing that they and the number of individual contributors should be evidence of party organizational complexity, and it is perhaps unsurprising to find that the dollar amount of PAC contributions clusters with the number of PAC contributors. To a lesser extent, $C2$ is also influenced by the number of other party committees receiving contributions, and DCON betweenness. On balance, $C2$ appears to fit the organizational complexity concept fairly well.

The third component, $C3$, appears to closely reflect the candidate-directed activity subconcept from Table 3.2, with three of the four variables loading strongly onto the component. The number of candidates receiving contributions, the total amount of those contributions, and DCON betweenness are the primary influences. DCON closeness also loads on $C3$ to a lesser extent.

Finally, $C4$ is influenced positively by the number of other party committees receiving contributions, the total amount of contributions to other party committees, and by DCON betweenness. I had predicted that the first two variables would cluster together and represent the concept of institutional support activity. Curiously, DCON closeness is also strongly loaded onto $C4$, but the relationship is negative rather than positive. On reflection, this finding may bolster the interpretation of this factor as representative of institutional support activity. We may imagine, for example, that party organizations that are in a position to transfer funds to a large number of other party committees may already find themselves

in an advantageous position with regards to their finances. These organizations may therefore have a more difficult time attracting contributions from additional PACs, which would be reflected in decreased closeness centrality.

Though the fits are not perfect, it seems that components $C2$, $C3$, and $C4$ roughly approximate the conceptual bins into which I had placed them. This result is heartening, as it provides some limited evidence that the campaign finance network variables may in fact be capturing party organizational strength. The last component, $C1$, was not anticipated based on the conceptual map that I adapted from Cotter et al., however, the variables that load onto $C1$ do suggest that it reflects the ability of party organizations to attract interest from individual donors. Conceptually, the ability to attract individual donations could be related to the popularity of the state party, its fundraising prowess, or the competitiveness of party politics in the state. All three of these concepts, fortunately, are closely related to the concept of organizational strength, so the presence of this component is not particularly troubling.

Recall that the rotation method used in this principal components analysis allowed the extracted components to correlate with one another, and indeed they do. In particular, $C2$, $C3$, and $C4$ each correlate fairly strongly with $C1$, with coefficients of 0.31, 0.25, and 0.21, respectively. Cotter et al. (1984) take the correlations between their organizational strength factors as justification to perform a higher-order factor analysis, from which they extract a single factor. Before following their method, I conduct a second parallel test (Horn 1965), this time on the component scores from my initial analysis, to determine whether it would be appropriate to further reduce the number of components. The test suggests that it would be appropriate to extract a single second-order component from the first-order components. Thus, I conduct a second principal components analysis, the results of which are presented in Table 3.4.

The second-order component explains 41% of the variance in the first-order components, and all four initial components load strongly onto the second-order component, suggesting that the second-order analysis fits the underlying data fairly well. Furthermore, the second-order component scores correlate well with the 12

Table 3.4: Component loadings for second-order principal components analysis of party organizational strength data.

First-order Component	$2C1$	h^2
$C1$	0.73	0.54
$C2$	0.70	0.48
$C3$	0.61	0.37
$C4$	0.51	0.26
Proportion of Variance	0.41	

underlying variables from the campaign finance data. The smallest correlation coefficient is with the measure of the number of candidates receiving contributions (0.34), while the largest is with the number of individual contributors (0.79). Given the underlying noise in the data, these correlations seem quite strong. Therefore, I believe it is appropriate to use these second-order component scores as a measure of *party organizational strength* for state party committees.

As a simple validity check, I compare the Cotter et al. (1984) estimates of organizational strength for 90 of the 100 state party committees over the years 1975-1980 to my second-order component scores for the same committees in the 1979-1980 electoral cycle. The two measures correlate moderately well, with a coefficient of 0.32 ($p < 0.005$). Some of the discrepancy between the two measures may be attributed to the fact that my data only cover party organizational activity in federal elections, while the Cotter et al. survey data cover non-federal activity. Additionally, the Cotter et al. (1984) measure appears to systematically rate state party organizations more strongly than does my measure. This may be a function of overestimation of party organizational capacity by survey respondents in the Cotter et al. study, or the fact that the Cotter et al. measure is compiled from data from six different years, while my data are all compiled from FEC data from the 1979-1980 electoral cycle. In light of those potential issues, a correlation coefficient of 0.32 between the two measures seems much stronger.

3.2.4 Results

Equipped with a this new measure, we are now able to consider the development of state party organizational strength for every state party committee, on an election year by election year basis, for every electoral cycle since 1979-1980.

In Figure 3.2, I present time series plots of the mean organizational strength for Democratic (top panel) and Republican (middle panel) state party committees grouped by their census region, difference in means between the two parties (bottom panel). These plots support the widespread finding in the party organizations literature that state parties have become increasingly well organized over time.

Additionally, these plots suggest the presence several other interesting phenomena. We see, for example, that for both parties, in most electoral cycles, midwestern state parties are the most strong on average. This result makes intuitive sense, given that organizational strength is thought to be associated with the presence of inter-party competition (Jewell & Morehouse 2000), and the Midwest has long been the most competitive region between the two parties. We also see evidence of a decline in Republican state party organizations in the Northeast after the 2000 electoral cycle that is consistent with flagging Republican electoral fortunes in that region.

Looking at the bottom panel in Figure 3.2, we find evidence that the balance of organizational power between the two parties remained fairly equal for most of the 1980s and 1990s. The results for the first decade of the 21st century, however, the results are quite stunning. Between 1998 and 2000, Republican state committees gain significant ground on the Democrats, becoming more powerful on average in the West, Northeast, and South regions, while losing significant ground in the Midwest. In 2002, Republican committees widen their advantage in the South and West, while losing substantial ground in the Northeast. In 2004, Republican committees in the South, West, and Northeast all drop sharply in organizational strength relative to Democrats. By 2008, Democratic committees enjoy a considerable advantage over their Republican counterparts in all four census regions, though Republicans gain some of this ground back in the Northeast, South, and Midwest in 2010.

These results reflect a decade in which Republican state committees remained relatively stagnant in organizational strength, while Democratic state committees continued to grow stronger, most notably during the 2008 and 2004 election cycles. The broad failure of Republican committees to keep pace with Democratic
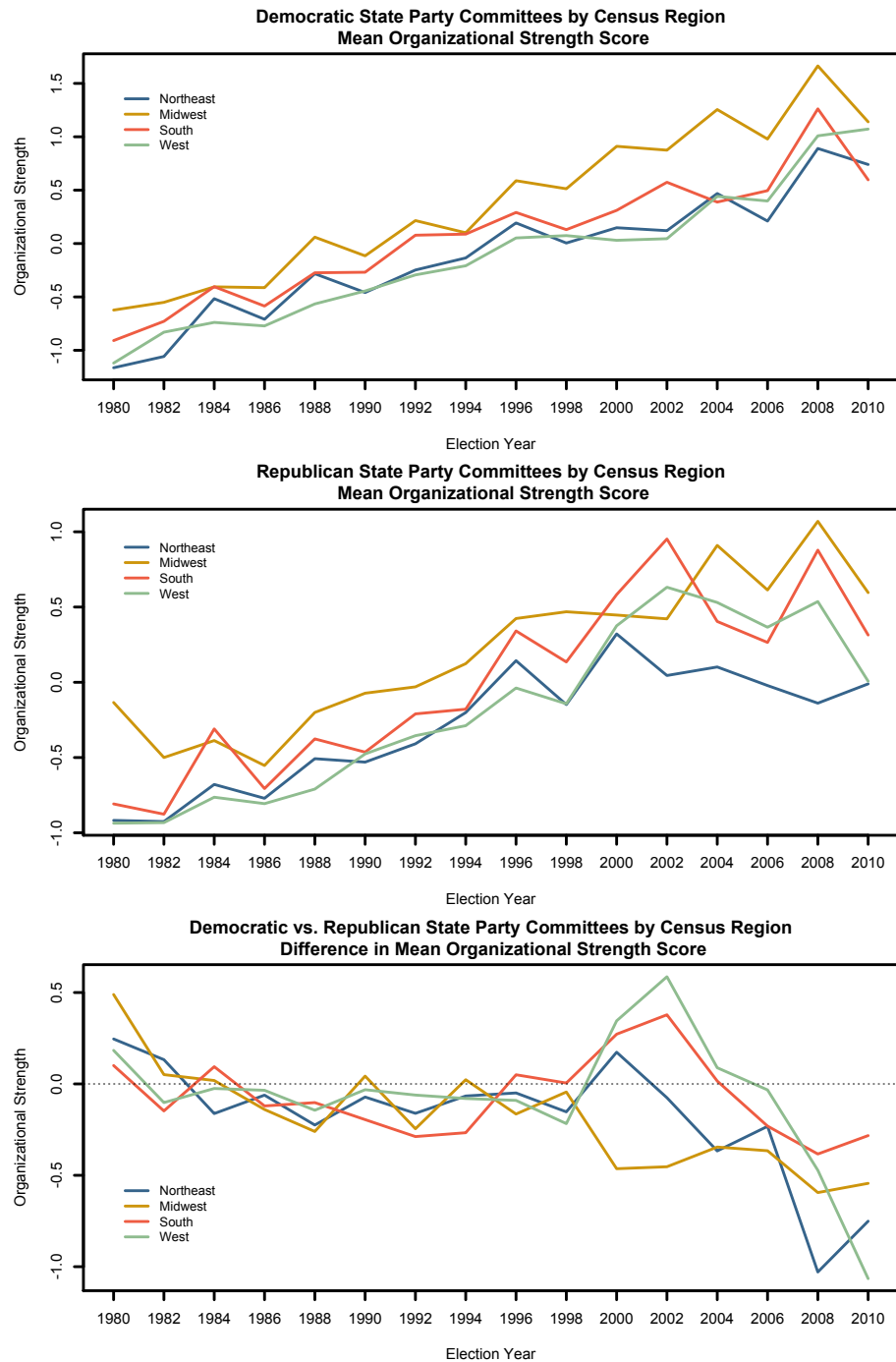
Figure 3.2: [Color online] Top: Mean organizational strength scores for Democratic state party committees, by census region. Middle: Mean organizational strength scores for Republican state party committees, by census region. Bottom: Difference in mean organizational strength scores for Democratic and Republican state party committees, by census region.

committees, especially after 2002, suggests that the Republican party may have had substantial difficulty adapting its organizational machine to the new institutional environment posed by the passage of the Bipartisan Campaign Reform Act. The Republican Party is known to have relied heavily on soft money contributions to cover its organizational costs (La Raja 2008). With the ban on soft money imposed by BCRA starting in 2004, it is possible that Republican state committees lost ground to the Democrats as they attempted to develop networks of hard money donors to support their activities.

3.3   Measuring National Party Integration

Review of the history of party organizational strength at the state level has provided us with valuable insights into the balance of power between the parties. Now, we turn our attention to an examination of the relationship between state party and national party organizations. The theory I outlined in Chapter 1 implies not only that state party organizations should be observed to increase in strength over time, but also that they should be observed to become increasingly integrated with their national party committees.

I argue that state party integration with the national committees is essential to the party's ultimate goal of controlling the levers of governmental institutions. I take *integration* to mean the degree to which the state and national party organizations are funded from common sources of PAC and individual donors. High levels of common funding indicate that the state and national party organizations are attractive to the same types of donors, and therefore suggest that the state and national parties are effectively coordinating their ideological messages, and policy proposals across different levels of their organizational network. In essence, high levels of integration should be indicative of a strong party brand.

Given the restrictions on campaign finance posed by the FECA and the BCRA, and the presence of fierce inter-party competition, integration is particularly important because it implies that the party organizations are not only locating new sources of funding, but also successfully inducing those new funding sources

to contribute broadly to the party cause. In this context, an observation that state party organizations are increasing in strength while not also increasing in their integration with the national party organizations could be an indication of a factional rift emerging between national and regional party support bases.

3.3.1 Components of National Party Integration

Unlike party organizational strength, which has been extensively mapped as a concept, the integration of state parties with national parties has not been subjected to a rigorous theoretical treatment. Cotter et al. (1984) do measure the integration of state parties with national parties, but their measure is simply a composite index of survey questions dealing with national party services provided to state parties, such as staff, polling, research, voter identification projects, and monetary transfers (Cotter et al. 1984:63). Their measure is reasonable given their limited access to survey data, but at best it indicates the breadth of services that national party committees provide. It says nothing about the level of service provision, or the state party committee's dependence on those services.

Additionally, their measure provides no insight into the level of overlap between national and state party support bases. More recent theories of political parties (Aldrich 1995, Bawn, Cohen, Karol, Masket, Noel & Zaller 2012), including the one I outline in Chapter 1, however, emphasize the importance of activists, donors, interest groups, and other party allies in the maintenance of strong and cohesive parties. Any useful measure of the integration of state and national parties, therefore, must include some assessment of the similarity of donor bases. Indeed, the measure I proposed is based exclusively on such assessments.

Using data from the campaign finance networks outlined in Chapter 2, I identify variables that measure the degree of similarity between state party and national party donor bases. In particular, I wish to capture the proportion of state party donors and state party contributions that are shared with the three national party committees: the national committee, the congressional committee, and the senatorial committee. Thus, for each of the three national committees, I calculate the number of PAC donors, the number of individual donors, the amount of PAC

Table 3.5: Components of State Party Committee Integration with the National Party Committees

Components of National Party Integration
- Proportion of PAC Contributions Shared with National Committee
- Proportion of PAC Contributions Shared with Congressional Committee
- Proportion of PAC Contributions Shared with Senatorial Committee
- Proportion of PAC Donors Shared with National Committee
- Proportion of PAC Donors Shared with Congressional Committee
- Proportion of PAC Donors Shared with Senatorial Committee
- Proportion of Individual Contributions Shared with National Committee
- Proportion of Individual Contributions Shared with Congressional Committee
- Proportion of Individual Contributions Shared with Senatorial Committee
- Proportion of Individual Donors Shared with National Committee
- Proportion of Individual Donors Shared with Congressional Committee
- Proportion of Individual Donors Shared with Senatorial Committee

contributions, and the amount of individual contributions that the national committee has with a given state committee. I then divide these by the total number of PAC donors and individual donors, and the total amount of PAC contributions and individual contributions received by the state committee. This leaves me with twelve variables, four for each national committee. A list of these variables is provided in Table 3.5.

3.3.2 Methods

As with the measure of party organizational strength I outlined earlier, here I again employ higher-order principal components analysis in order to extract a single variable from the 12 underlying variables. A parallel test (Horn 1965) on the raw variables indicated that it would be appropriate to extract 3 components for the first-order principal components analysis. The component loadings for the first-order analysis are presented in Table 3.6.

Unlike with the party organization measure, I had no intuition in this case about how the variables would load onto the extracted components. However, the loadings in Table 3.6 make interpretation a fairly simple endeavor. The first component, $C1$, quite clearly represents the degree of integration between state committee PAC donor bases and national committee PAC donor bases. The fact that national, congressional, and senatorial committee PAC variables all load highly onto this component suggest a high level of correlation between PAC donor bases

Table 3.6: Component loadings for first-order principal components analysis of national-state party integration data.

Variable	$C1$	$C2$	$C3$	h^2
CC PAC Donors	**0.88**	0.04	0.01	0.79
CC PAC Amount	**0.86**	0.02	-0.09	0.71
CC Individual Donors	-0.08	**0.88**	0.00	0.76
CC Individual Amount	0.01	**0.90**	-0.08	0.78
NC PAC Donors	**0.82**	-0.19	0.08	0.71
NC PAC Amount	**0.78**	-0.15	0.07	0.63
NC Individual Donors	-0.03	0.07	**0.93**	0.89
NC Individual Amount	0.01	-0.07	**0.94**	0.86
SC PAC Donors	**0.87**	0.09	0.01	0.78
SC PAC Amount	**0.84**	0.12	-0.08	0.71
SC Individual Donors	0.12	**0.55**	**0.40**	0.63
SC Individual Amount	0.21	**0.55**	0.31	0.58
Proportion of Variance	0.36	0.20	0.18	
Cumulative Variance	0.36	0.56	0.74	

among the three national committees. The second component, $C2$, reflects the similarity of state committee individual donor bases to congressional and senatorial committee donor bases, while $C3$ reflects similarity with national committee individual donor bases. Interestingly, all of the variable load heavily onto one component, with the exception of the variables relating to individual donors to the senatorial committee.

Table 3.7: Component loadings for second-order principal components analysis of national-state party integration data.

First-order Component	$2C1$	h^2
$C1$	0.62	0.39
$C2$	0.65	0.43
$C3$	0.79	0.62
Proportion of Variance	0.47	

A parallel test on the first-order components indicated that a single second-order component would be appropriate to extract, so I again perform a second-order principal components analysis. The results of that second-order analysis are presented in Table 3.7. The first-order components all load strongly onto the higher-order component, and the underlying variables all correlate highly with the second-order component scores, indicating that the analysis fit the underlying data well, and suggesting that the second-order component scores provide a reasonable composite score of state party committee integration with the national party committees.

3.3.3   Results

In Figure 3.3, I present plots of mean national party integration scores for Democratic (top panel) and Republican (middle panel) state committees by census region, as well as the mean difference between national party integration scores (bottom panel).

Democratic state party committees give the appearance of gradually increasing their integration with the national party committees over time, with particularly large spikes in integration occurring in 1988 and 2004. Republican state committees, however show a sustained, dramatic increase in national party integration between 1990 and 1996. Over this time, the Republican state committees go from having virtually no integration with the national committee donor bases to being extremely well-integrated. This shift is clearly related to the increasing congressional competitiveness of the Republican party, and corresponds to a period in which Republican national committees were dramatically increasing their betweenness and closeness centrality in the campaign finance networks.

Looking at the comparison between the two parties in the bottom panel of Figure 3.3, we see that the Republican state committees start out relatively similarly to their Democratic counterparts, in that neither party's state committees were particularly well integrated with the national committees. Throughout the 1980s, however, Democratic state committees begin to integrate, while Republican committees somehow manage to become still less integrated with their national committees. After reaching their nadir relative to the Democrats in 1990, however, Republican party committees begin their furious climb towards national integration. It is no coincidence, of course, that is occurs over a period in which Republican congressional leadership, and Newt Gingrich in particular, began to push hard for the nationalization of the Republican party brand, culminating in the singing of the "Contract with America" and the Republican party takeover of Congress in 1994 (Jacobson 1996, Little 1998).

In the period from 1996 to 2002, national party integration levels remain relatively stagnant, with the Republicans enjoying integration advantages in the Midwest and South, and the Democrats enjoying similar advantages in the West
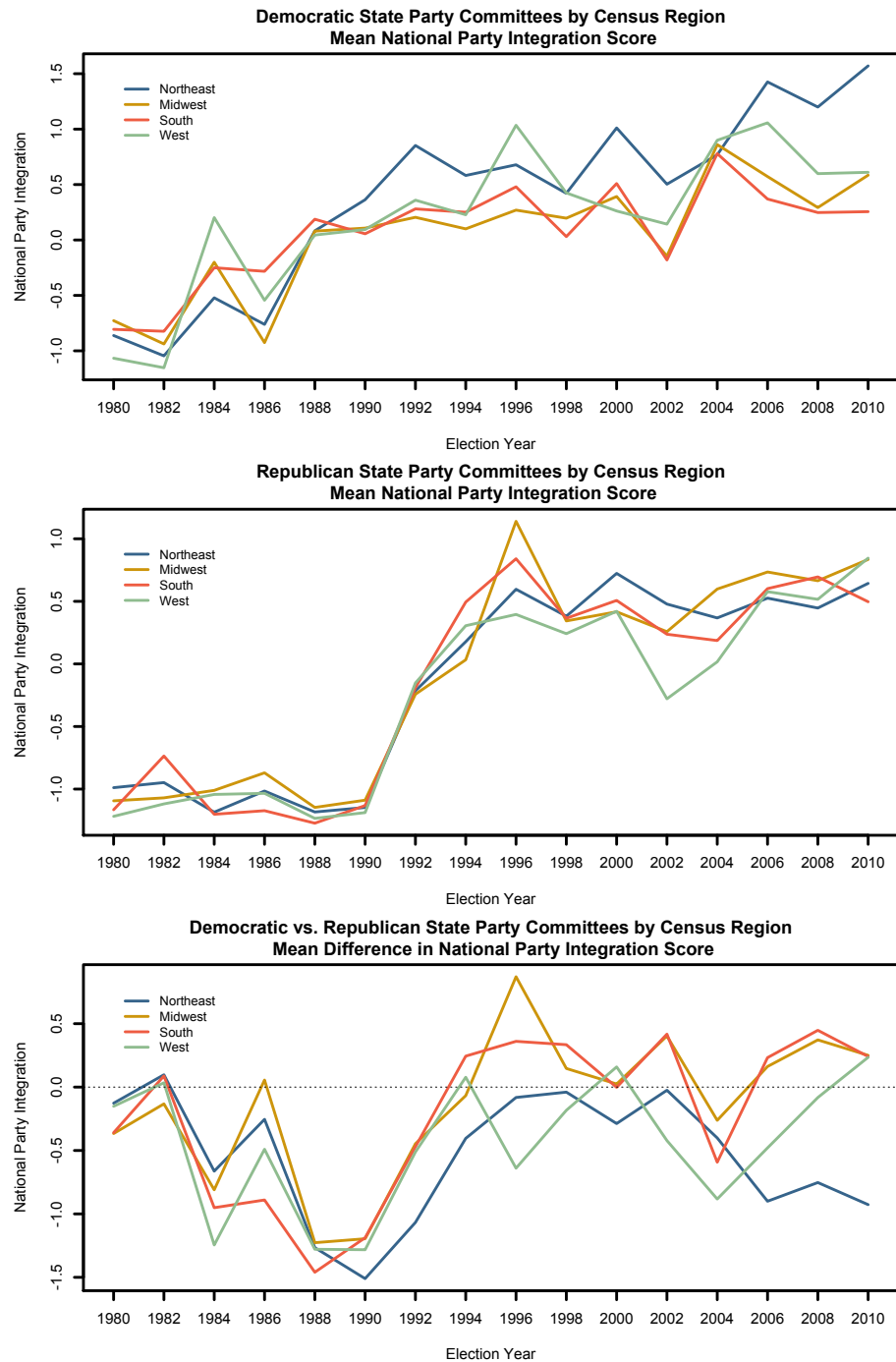
Figure 3.3: [Color online] Top: Mean national party integration scores for Democratic state party committees, by census region. Middle: Mean national party integration scores for Republican state party committees, by census region. Bottom: Difference in mean national party integration scores for Democratic and Republican state party committees, by census region.

and Northeast. This stalemate breaks down, however, in 2004, when Democratic state committees experience a large spike in national party integration, and the Republicans generally do not. However, following the surge of integration in 2004, Democratic state parties in the West, Midwest, and South all experience declines in national party integration. As of 2010, Republican state parties in the all three of those regions enjoyed an integration advantage over their Democratic counterparts. Only in the Northeast region did the Democratic state parties retain their advantage.

It must be noted, however, that the Republican integration advantage from 2006 to 2010 occurs over a period in which Democratic state party committees are becoming substantially stronger than their Republican state committees, as seen in the bottom panel of Figure 3.2. Thus, the apparent Republican advantage may be an artifact of particularly strong Democratic state party committees. Stronger Democratic state party committees may be expanding their donor bases at a faster pace than they are able to coordinate those donor bases with the national committees. Of course, indications that Democratic state committees are becoming more strong organizationally while not correspondingly becoming more integrated with the national party could also represent growing discrepancies between national and regional Democratic donor bases, which could in turn lead to future factional rifts within the Democratic party.

3.4 Organizational Strength and Party Competition

With measures of state party organizational strength and national integration in hand, I now consider the relationship between state party power and phenomenon of substantive interest. I first look at the relationship between state party strength and the degree of major party competition at the state level. The theory I outlined in Chapter 1 suggest that inter-party competition should be a significant factor motivating the development of party organizational strength. The evidence from campaign finance networks presented in Chapter 2 corroborates this

theoretical account, and offers the additional insight that major party competitiveness spikes in the campaign finance networks in the early 1990s. Indeed, a similar spike is seen in the national integration of state party committees over this time period (see Figure 3.3).

I operationalize major party competitiveness at the state level using the Democratic presidential candidate's share of the two-party vote in the most recent presidential election. Under this operationalization, a state may be considered competitive if the Democratic presidential candidate's vote share is close to 0.5. My expectation is that we will tend to observe stronger state party organizations in states that are competitive in this fashion. Additionally, I expect that the effects of party competition on state organizational strength will be larger in the period from 1994-2010, as this is a period over which party competition is known to be fierce at the national level.

Figures 3.4 presents local regression estimates of the relationship between party organizational strength and state competitiveness at the presidential level. Here we find the expected relationship between competitiveness and organizational strength. On the left-hand panels, which cover observations from 1980-1992, we observe a positive relationship between democratic presidential vote share and organizational strength for both Democratic and Republican state party committees. In these panels, we observe no evidence that competitiveness is related to organizational strength. Rather, it appears that both parties over this time period are more strongly organized in states that vote more Democratic in Presidential elections. This observation is likely due to the substantial correlation between state population and democratic presidential vote share (0.958). Even absent stiff competition, there are a number of reasons to expect that more populous states would have stronger state parties. Higher population states, for example, tend to have wealthy urban centers that are a focal point in the search for campaign funds by both parties.

On the right-hand panels, covering 1994-2010, we observe a strong relationship between presidential competitiveness and state party organizational strength. In both the Democratic and Republican parties, strongly organized states are those
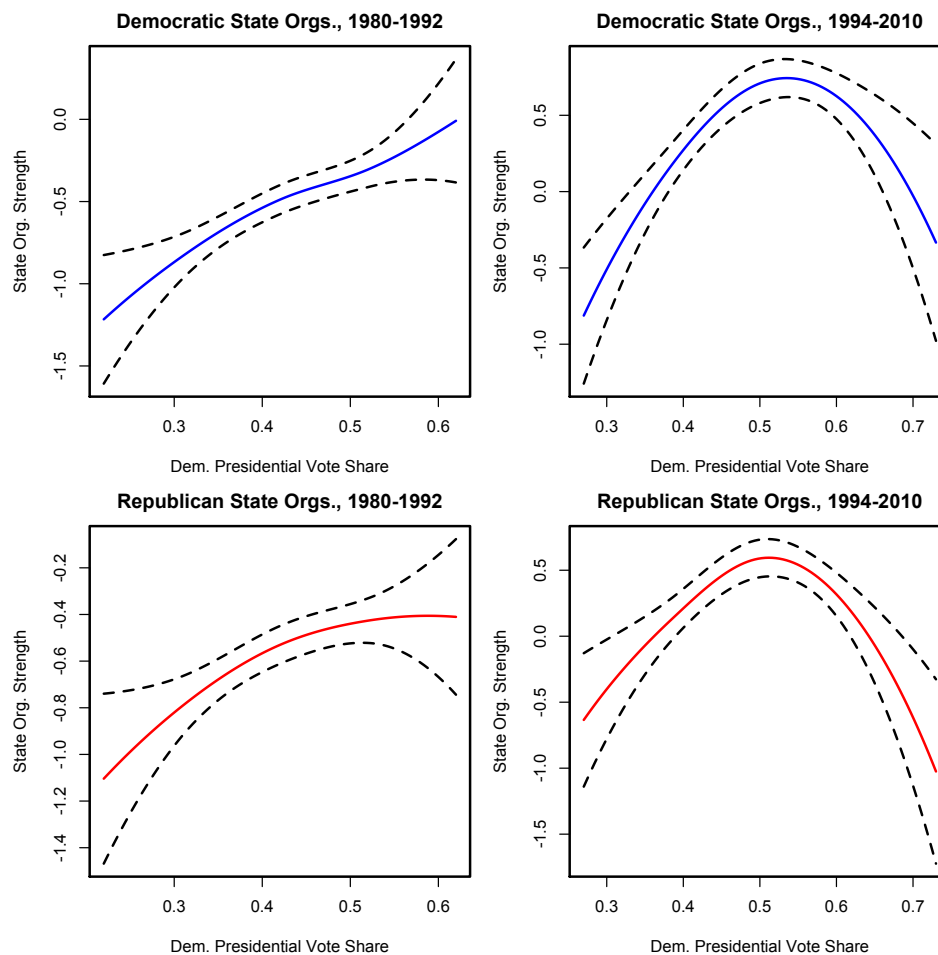
Figure 3.4: [Color online] Local regression estimates of the relationship between state party organizational strength and Democratic presidential vote share, with 95% confidence intervals. Top left: Democrats, 1980-1992. Top right: Democrats, 1995-2010. Bottom left: Republicans, 1980-1992. Bottom right: Republicans, 1994-2010.

in which presidential elections are most competitive. It is in these states that the parties have the strongest incentive to organize. In states that are either safe for the party or out of reach, the marginal value of investments in organizational capacity are low. The fact that we observe the expected relationship between organizational strength and competitiveness in both time periods reflects positively on the internal validity of the organizational strength measure.

3.5   Organizational Strength, National Integration, and Ideological Extremity

In addition to being associated with major party competition, I also expect state party organizational strength to be associated with partisan ideological extremity. Indeed, the theory of party organization that I lay out in Chapter 1 implies that a key purpose of organizational investment by parties is to create product differentiation from competing parties by developing highly ideological messages and using them to locate and target ideologically extreme voters, donors, and activists. In essence, this activity allows the two parties to compete over their organizational and fundraising powers, rather than their ability to generate policy proposals that appeal to the median voter (Downs 1957).

To the extent that organizational activity is indeed directed at developing ideologically-distinct messages and creating ideologically-divergent support bases for the parties, we should expect to observe a relationship between organizational strength and partisan ideological extremity in the states. Furthermore, to the extent that the national integration measure reflects the ability of state organizations to coordinate their messaging and support bases with those of the national party, we should also see a strong relationship between national integration and ideological extremity.

Recently, Shor and McCarty (2011) conducted extensive analyses of roll call data in state legislatures and used these to develop ideal point estimations for state legislators. One of the key advantages of these new and important data is the ability to estimate the ideological extremity of party caucuses in state legislatures,

much as McCarty et al (2006) do in the United States Congress. Here, I use the Shor and McCarty estimates of Democratic and Republican caucus ideal point medians to operationalize the level of ideological extremity of each party in each state. The only drawback to these data is that they do not cover the period from 1980-1992, and data for all states are not available for all years from 1994-2010. Though this limits our ability to examine the changing impact of organizational strength on ideological extremity as the parties become nationally competitive, we still have plenty of data to examine this relationship over the past 20 years.

In Figure 3.5, I present local regression estimates of the relationship between state party organizational strength and the ideological extremity of state legislative party caucuses. Figure 3.6 presents the relationship between national integration of state parties and ideological extremity. In both figures, the revealed relationship conforms well with expectations. Among Democrats, we see strong negative relationships between the measures of strength and integration and the measures of ideological extremity in state houses and senates. The negative relationship is expected, as lower values on the ideological extremity measure indicate more 'liberal' ideology. This indicates that states with stronger and better-integrated Democratic state committees also tend to have highly ideological legislative caucuses at the state level.

Similarly, among Republicans, we find a positive relationship between organizational strength and integration and the ideological extremity of party state legislative caucuses. There are, however, very curious cross-party differences in the shape of the regression lines, especially in those dealing with ideological extremity in state houses. The relationship between Democratic state party organization and ideological extremity in the state house follows a gradual negative slope. In the case of national integration, the negative relationship with ideological extremity appears to be nearly monotonic. In the Republican state house case, however, the relationships with organizational strength and integration are obviously non-monotonic. Particularly strong and well-integrated Republican parties are observed only in states with highly ideological Republican house caucuses. Caucuses with low and moderate levels of ideological extremity do not appear to enjoy strong
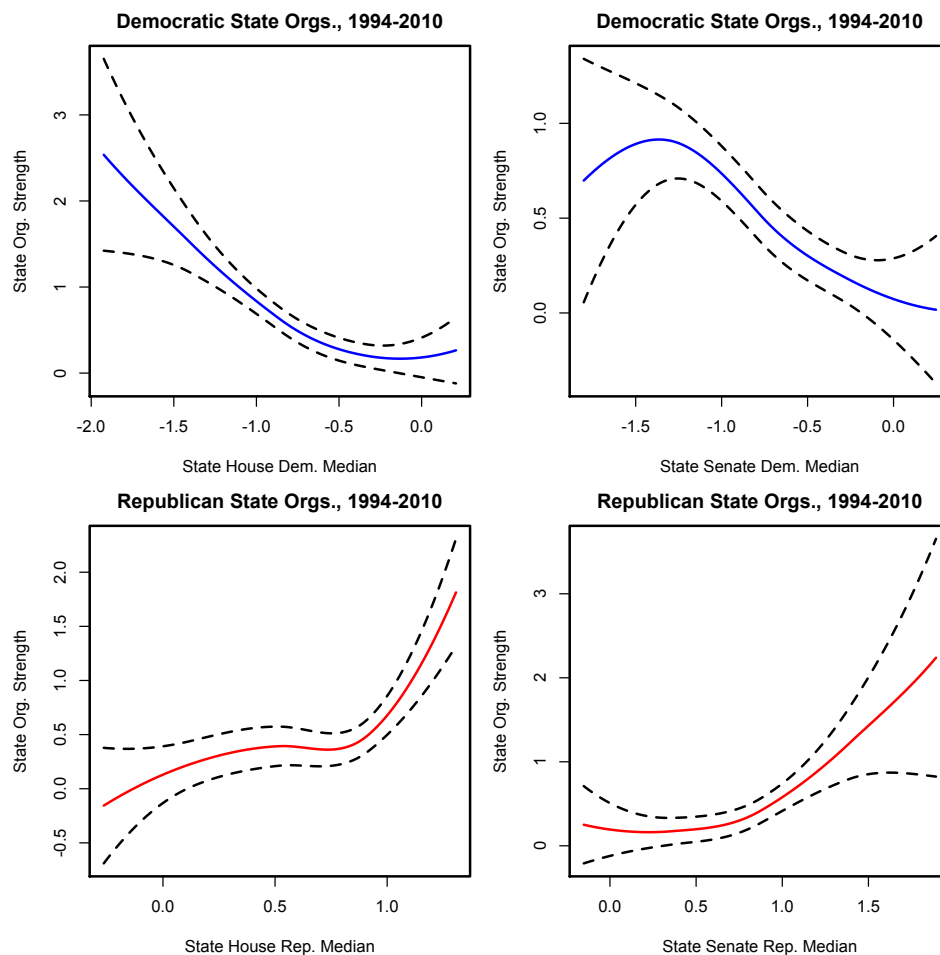
Figure 3.5: [Color online] Local regression estimates of the relationship between state party organizational strength and ideological extremity, with 95% confidence intervals. Top panels show Democratic organizational strength vs. Democratic party medians in state houses and state senates, respectively. Bottom panels show Republican organizational strength vs. Republican party medians in state houses and state senates, respectively.
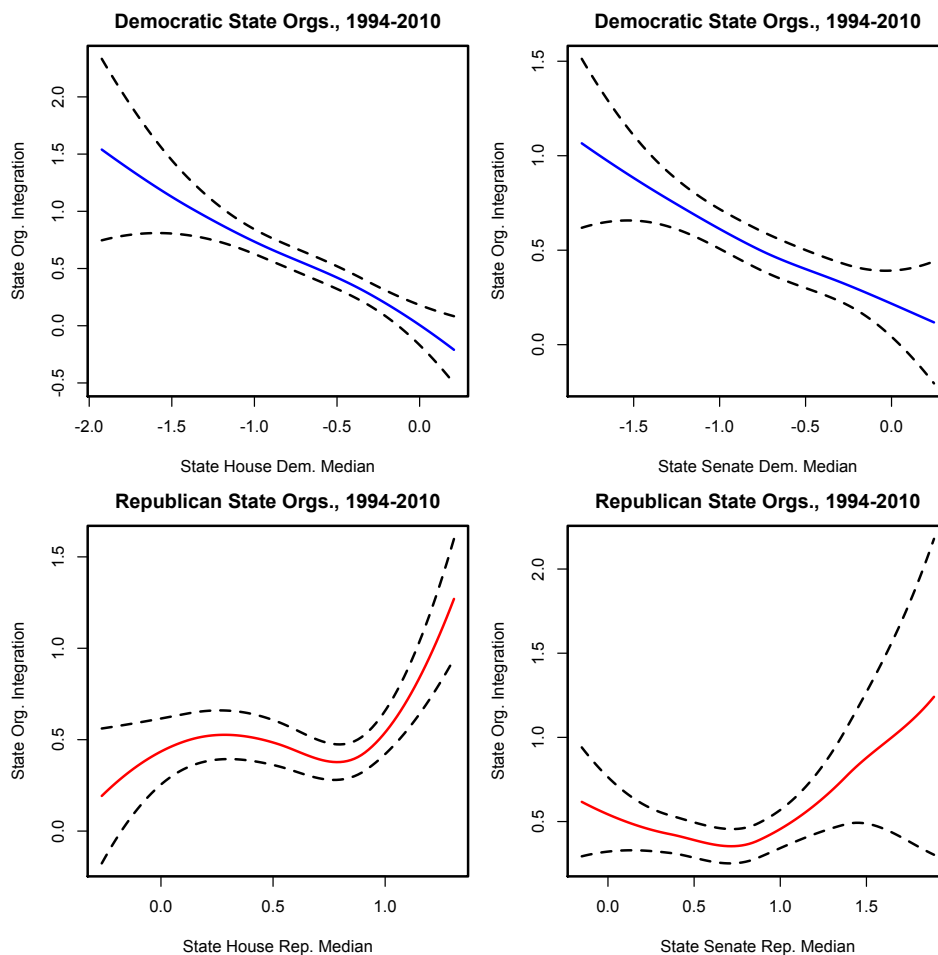
Figure 3.6: [Color online] Local regression estimates of the relationship between state party national integration and ideological extremity, with 95% confidence intervals. Top panels show Democratic integration vs. Democratic party medians in state houses and state senates, respectively. Bottom panels show Republican integration vs. Republican party medians in state houses and state senates, respectively.

and well-integrated state parties.

The reason for this pattern is difficult to discern, however, it may reflect the ideological narrowness of the Republican party support bases. This would be the case if, for example, Republican parties at the state level were only able to demonstrate their worth to supporters by offering extremely ideological messages, and parties failing to demonstrate such commitments were not similarly rewarded. In the case of state party integration, it may be the case that the messaging coming out of the national Republican party organizations, as a byproduct of their ideological extremity in Congress, encourages national Republican supporters only to support those state parties that successfully elect highly conservative ideologues.

It is clear from these analyses that there is a strong relationship between state party organizational strength, state party national integration, and the ideological extremity of party caucuses at the state level. These findings support the narrative that competition, party organization, and polarization are intricately related but fall short of providing evidence that organizational strength and integration are causally related to increases in the ideological extremity of state legislatures.

In order to establish the causal relationship between organizational strength and ideological extremity, I conduct a series of mixed-effects linear regressions using the ideological extremity of state legislative caucuses as dependent variables, and the measures of state party organizational strength and national party integration as key independent variables. The mixed-effects linear specification is ideal in this context because it allows me to account for the certain autocorrelation between my state-level variables over time (Gelman & Hill 2007). This is accomplished by treating the relationship between state-level, at which our variables are measured, and the year-level, at which the autocorrelation occurs, as a random effect, meaning that different intercepts and slopes are estimated for each state-year combination. This ensures that the model will return appropriate estimates of the coefficients and standard errors of the fixed effects in which we are substantively interested.

The four dependent variables in my regression specifications are the estimates of Republican and Democratic party ideal point medians in state houses and

senates made available by Shor and McCarty (Shor & McCarty 2011), again used as operationalizations of ideological extremity. The key independent variables are the organizational strength and national integration of the state Democratic and Republican parties. Importantly, these organizational variables are measured for the election cycle prior to the legislative sessions for which the ideological extremity variables are measured, ensuring their temporal priority. As control variables, I include the three caucus ideological extremity estimates not being used as a DV, along with estimates of state population, real GDP per capita, unemployment rate, and Democratic presidential vote share. Year is also included as an independent variable in order to account for any linear time trend.

I estimate two specifications for each dependent variable. The first specification includes the variables listed above. The second specification includes an interaction between party organizational strength and national integration, in order to test whether state parties that are both strong and well-integrated result in more ideologically extreme legislators. Fixed effects coefficients and standard errors for these regressions are presented in Table 3.8. Let us first consider the top panel of Figure 3.8, which documents the effects of party organizational variables on the ideological extremity of state house caucuses. On the Democratic side, we find a negative and significant relationship between Democratic state organizational strength and the party's state house median. This indicates that Democratic state house members become *more extreme*, as predicted, when their state party increases in organizational strength. The effect, however, is not very powerful, and does not hold up in the second regression specification, which includes interactions between strength and integration.

On the Republican side, we find no significant effects between Republican party strength and ideological extremity. However, we do find that *Democratic* party organizational strength has a strong positive impact on the ideological extremity of Republican state house caucuses. This effect holds through both model specifications. Though this finding was not predicted, it has potentially important implications for the relationship between conservative ideology and the business of political organization, because it suggests that Republican moves toward ideolog-

Table 3.8: Fixed effects coefficients and standard errors for mixed-effects linear regression specifications. Significance estimates are calculated using Type II Wald tests. Random effects are not displayed but are available upon request.

	Democratic House Extremity						Republican House Extremity					
	(1)			(2)			(1)			(2)		
Variable	Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.	
Dem Org. Strength	-0.016	0.007	*	-0.005	0.009		0.028	0.007	***	0.027	0.007	***
Dem Org. Integration	0.002	0.006		0.008	0.009		0.007	0.007		0.007	0.008	
Rep Org. Strength	0.004	0.005		0.001	0.007		-0.010	0.006	.	-0.011	0.006	.
Rep Org. Integration	0.004	0.006		0.006	0.009		0.009	0.007		0.009	0.007	
Dem Strength*Integ.				-0.005	0.008					0.002	0.007	
Rep Strength*Integ.				-0.001	0.007					0.002	0.006	
Dem House Median							0.025	0.047		0.025	0.048	
Rep House Median	0.081	0.059		0.046	0.061							
Dem Senate Median	0.271	0.035	***	0.353	0.037	***	0.075	0.036	*	0.075	0.036	*
Rep Senate Median	0.046	0.044		0.037	0.047		0.044	0.040		0.044	0.041	
Population (100K)	-0.002	0.001	***	-0.003	0.001	***	0.001	0.001		0.001	0.001	
GDP Per Capita ($1997)	-1.584	2.166		2.481	2.141		-7.737	1.784	***	-7.738	1.789	***
Unemployment Rate	0.003	0.004		0.006	0.005		0.003	0.004		0.003	0.004	
Dem Pres Vote Share	-0.014	0.115		-0.226	0.146		-0.058	0.122		-0.064	0.124	
Year	-0.001	0.004		-0.009	0.004	*	0.015	0.003	***	0.015	0.003	***
(Intercept)	2.106	8.254		16.872	7.522		-29.378	6.307		-29.348	6.326	

Significance codes ($p <$): *** 0.001, ** 0.01, * 0.05, . 0.1.

	Democratic Senate Extremity						Republican Senate Extremity					
	(1)			(2)			(1)			(2)		
Variable	Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.	
Dem Org. Strength	0.002	0.011		0.004	0.011		-0.002	0.009		-0.012	0.010	
Dem Org. Integration	-0.010	0.012		-0.008	0.012		-0.003	0.008		-0.021	0.011	
Rep Org. Strength	0.006	0.009		0.006	0.010		0.002	0.007		0.006	0.009	
Rep Org. Integration	-0.014	0.011		-0.014	0.012		0.008	0.008		0.011	0.010	
Dem Strength*Integ.				-0.005	0.011					0.025	0.010	**
Rep Strength*Integ.				0.000	0.009					-0.011	0.008	
Dem House Median	0.629	0.063	***	0.628	0.063	***	0.096	0.067		0.072	0.064	
Rep House Median	0.168	0.078	*	0.168	0.078	*	0.259	0.068	***	0.308	0.068	***
Dem Senate Median							0.027	0.048		-0.011	0.049	
Rep Senate Median	-0.017	0.061		-0.013	0.062							
Population (100K)	0.000	0.001		0.000	0.001		0.001	0.001		0.001	0.001	
GDP Per Capita ($1997)	2.628	2.784		2.618	2.792		-5.236	2.659	*	-3.709	2.477	
Unemployment Rate	0.002	0.007		0.002	0.007		-0.005	0.005		-0.010	0.006	
Dem Pres Vote Share	0.072	0.190		0.077	0.192		0.090	0.146		0.246	0.171	
Year	-0.006	0.005		-0.006	0.005		0.015	0.005	**	0.013	0.004	**
(Intercept)	11.915	9.817		11.871	9.845		-28.881	9.974		-26.448	8.649	

Significance codes ($p <$): *** 0.001, ** 0.01, * 0.05, . 0.1.

ical extremity may be a *response* to Democratic party success at organizing.

There are at least a couple of reasons why this might be the case. For example, we have found that, especially in recent years, Democratic state parties have opened up a significant organizational advantage over Republican state parties. It may be the case that successful Democratic organizational efforts have had the effect of denying Republican parties access to needed campaign funds, particularly funds from less-ideological supporters. In this scenario, the Republicans would need to respond by pursuing ever more extreme ideological viewpoints in order to recoup their lost revenues. These ideological messages could be carried by outside groups, lower level party organizations, or by state and local Republican candidates, whose activities we are unable to capture given available data. It may also be the case that conservative forces in the states are aware of increasing Democratic organizational capacity, and are able to use the threat of Democratic takeover to extract higher degrees of ideological extremity from state-level candidates and legislators. Such a response may not be captured in these regressions either because of missing variables, or because the type of messaging that conservative forces engage in does not require much organizational capacity. It may suffice for conservatives to broadcast the perception of Democratic threats through alternative channels, such as talk radio, or cable news.

In the state senate Regressions, we find no relationship between party organizational strength variables and the ideological extremity of Democratic state senate caucuses. Senate democratic caucuses seem primarily driven by the ideological battles taking places on the floor of state houses. On the Republican side, we no longer observe a significant relationship between Democratic organizational strength and ideological extremity, however, we do observe a strong and significant relationship between the interaction of Democratic organizational strength and national integration. This is also a fascinating result, because it suggests that the ideological extremity of state Republican senate caucuses is driven at least in part by the presence of strong, nationalized Democratic forces. It is logical to find this effect on the senate side instead of the house side, as state upper houses are likely to be more concerned with the intersection of national and state interests, which

could make the appearance of strong and nationalized Democratic state parties more salient to them.

3.6   Conclusion

In this chapter, I pursued two important implications of the theory of party organizations developed in Chapter 1 by analyzing the role of party organizations in the DCON and SID campaign finance networks developed in Chapter 2. First, I examined the centrality of party organizations at the national and state levels in the campaign finance networks. In those analyses, I found that national party organizations have long occupied dominant positions, routinely enjoying the highest levels of betweenness centrality in the networks. I also found that state party organizations experienced a decline in their betweenness centrality ranks in the DCON networks from 1994 to about 2006, while simultaneously increasing substantially in their betweenness ranks in the SID networks. I hypothesized that those dynamics may reflect the changing roles of state committees in the party organizational hierarchies. Rather than engaging in attempts to build broad coalitions of economically-motivated PACs, it appears that state committees are now primarily engaged in the business of targeting and motivating ideologically-minded individuals, whose contributions come with comparatively few policy expectations.

Second, in search of a better understanding of the role of state party committees, I employed data from the campaign finance networks and the tool of higher-order principal components analysis, to develop new measures of state party organizational strength, and integration with the national party. In time-series charts of these measures, I found that state party committees in both parties have increased substantially in organizational strength, with Democratic party committees enjoying particular success in recent years relative to Republican committees. Similarly, both parties have seen strong increases in the integration of their state committees with their national committees, although this process has not occurred gradually over time. Rather, Republican committees experienced a large gain in national integration when the GOP began to seriously compete for congressional

majorities, and remained stable since that time. Democratic committees increased their integration more gradually, but their gains are concentrated in the 1988 and 2004 electoral cycles, the latter of which may be attributable to the relative success of the Democratic party at handling the changing institutional environment posed by campaign finance reform and the banning of soft money.

Finally, I examined the relationship between state party organizational strength and two phenomena to which theory suggested they should be related: inter-party competition and ideological extremism. I found that party organizational strength and integration in both parties were substantially affected by the presence of inter-party competition. I document the emergence of a strong relationship between Democratic presidential vote share and the organizational strength and integration scores of state party committees only after the 1994 electoral cycle signaled the end of Democratic party dominance in Congress. In analyses of the relationship between party organizational strength and the ideological extremity of state legislative caucuses, I find evidence of a powerful relationship between organizational strength, integration, and ideological extremity, which suggests that strong organizations are closely related to the emergence of ideological extremists in party politics.

In linear mixed-effects regression analysis, I make the intriguing finding that Democratic party organizational strength is significantly related to the ideological extremity of *Republican* state house caucuses, and that the interaction of Democratic organizational strength and integration is significantly related to the extremity of GOP state senate caucuses. These findings introduce the possibility that the Republican party is able to use the threat of Democratic party organizational strength to motivate ideological behavior among its members. It may also be the case, however, that failure of GOP state party committees to keep up with the organizational activities of Democrats has driven money that might fund organizational activity into outside groups, whose activities are not captured in the present regression analyses. Regardless of the explanation, these regression results make the important finding that party organization is significantly related to the growth of ideological polarization in the United States. This provides long sought

for evidence for a crucial aspect of the theory presented in the introductory chapter: that party organizational activity has a substantive impact on the behavior of politicians. In the next chapter, I follow this line further, and investigate the relationship between party organizational activity and levels of ideological extremity and partisanship in the United States House of Representatives.

4 Party Organizations and Party Government in the House

As discussed in the theory of party organizations outlined in Chapter 1, party organizations in the United States face numerous institutional disadvantages in their attempts to control the behavior of their candidates and officeholders. Most scholars assume that these disadvantages leave party organizations to passively accept the candidates provided to them via primary elections, and the electoral environments imposed on them by the actions of constituency-minded officeholders. Recent analyses of party organizational behavior suggest, however, that party organizations have adapted to their weak institutional position by becoming service-oriented bodies, providing candidates with links to donors, voters, and other sources of support. Acting as an intermediary between candidates and their sources of support, I argue, gives party organizations the opportunity to condition the electoral environment, affecting the types of candidates who choose to run for office, and the ability of those candidates to defect from the party line on important issues.

Here again I draw on data gathered from the campaign finance networks defined in Chapter 1 to examine the implications for party organizational strength and integration on the behavior of congressmen. In particular, I test the implication that strong and well-connected party organizations should generate more cooperative partisans. When party organizations occupy a network position connecting candidates to donors, my theory suggests that those candidates will be more loyal partisans if elected than those who connect directly to their donors, independent of party involvement. In order to effectively test this implication, I

consider several key dependent variables associated with the legislative behavior of members of the House of Representatives.

First, I examine the impact of party organizational activity on the legislative co-sponsorship behavior of members. As a dependent variable, I develop a measure of *party connectedness* that characterizes the willingness of congressmen to cosponsor the legislation that is sponsored by their fellow partisans. Congressmen who are well-connected to their party's donor bases, and who come from states with strong and well-integrated parties, I hypothesize, should be more willing to cooperate with members of their legislative party caucus by helping to advance the legislation of their colleagues. Evidence of a relationship between these variables would be an indication that party organizational strength results in the election of more party-oriented legislators, reducing coordination costs among members of House party caucuses, and increasing the ability of the party to pursue positive political agendas.

Second, I look at the relationship between organizational activity and the *party unity score* of House members. Party unity is a common measure of the partisan loyalty of congressmen, and examines the extent to which members of Congress vote with the majority of their party on roll call votes. Party unity has been examined as a dependent variable in previous studies of the effects of party organizational strength, with inconclusive results (Cantor & Herrnson 1997). However, I have argued that the lack of a party organizational effect in previous studies derives from the poorly theorized relationship between organizations and candidates, and poorly-gathered data on party organizational strength. In Chapter 1, I outlined the contours of a new theory, and in Chapter 3 I used that theory, along with data from the newly-assembled campaign finance networks, to develop more sophisticated measures of party organizational strength. Here, I hypothesize that stronger parties and better-connected candidates should lead to House members exhibiting a higher degree of partisan loyalty on roll call votes. A relationship between organizational strength and party unity would be an indication that strong organizations generate House members who are willing to aid the party in protecting its brand via negative agenda control.

In Section 4.1, I briefly review previous literature on the relationship between party organizational strength and party loyalty in Congress, noting its theoretical and empirical deficiencies. I then continue, in Section 4.2, to operationalize the theoretical relationship between several independent variables measuring party organizational strength and the key dependent variables: party connectedness in cosponsorships, party unity on roll call votes in the House of Representatives. In Section 4.3, I conduct empirical tests of my theory using a series of linear mixed-effects regression models and discuss the substantive implications of the results. Section 4.4 concludes.

4.1   Previous Work

Understanding the relationship between the party organizations and the party in government has become more crucial over the past three decades primarily because party organizations have surged in power, integration, and complexity over that time period. The overall effect of this organizational surge, I argue, has been to consolidate the power of national party organizations, by making them the central clearinghouse for the funding, information, and networking contacts necessary to win campaigns. As candidates and local/state party organizations become more dependent on national committee services for their electoral success, the national party leadership becomes increasingly able to influence candidate behavior and pursue national campaign strategies.

The same Progressive reforms that ushered in the era of the amateur activists, discussed in Chapter 1, also fractured the capacity for political parties to organize, resulting in what is commonly refereed to as an era of party decline. The literature examining party organizations in the 1940-1960s (Leiserson 1963, Wilson 1966, Ware 1985) found that party-based organization was largely non-existent. Organizations existed on predominantly in localities, and were informal, amateur organizations with little or no permanent membership (Mayhew 1986). At this time there was little communication between national, state and local parties, however, so the local parties were largely left to their own devices.

The primary purpose of these local parties was to nominate candidates for local, state, and Congressional office. Lacking the manpower, funding, or direction to effectively organize, however, the local parties performed their nominating functions without much rigor, often meeting only once a year, for the duration of nomination proceedings. Candidates, once empowered with the party label, were offered little from the party in the way of funding, campaign training, advertising and polling services, issue development, or other aid that would facilitate a successful campaign. Though office-seekers needed the party label to legitimate their candidacies (Schlesinger 1984, Schlesinger 1991), they were free to conduct their campaigns any way they saw fit. This required the candidates to develop networks of supporters and interests to fund and organize their campaigns. This was the beginning of the era of 'candidate-centered elections.'

This era of party organizational history also corresponded with significant changes in the ways that the electorate viewed the political parties. Public opinion surveys from the 1940s-1960s showed decreasing attachment among voters to political parties, increases in split-ticket voting, and other phenomena (Jacobson 2004). This period also marked a decline of party unity in Congress as measured by analyses of roll-call votes (Poole & Rosenthal 1984, Ansolabehere, Snyder & Stewart 2001b) and an increase in Congressmens responsiveness to district preferences (Ansolabehere, Snyder & Stewart 2001a). In organization, in the electorate, and in government, this was clearly a period of party decline. Many observers at the time assumed that this decline would continue, and that America was becoming a party-less country.

Beginning the 1970s, however, case studies and surveys of local, state, and national party organizations began to reveal a countervailing trend. Gibson et al. (1983, 1985) conducted a series of surveys from 1960-1980, asking national, state, and local party chairpersons questions concerning their partys organizational and programmatic capacities. Over the period covered by the surveys, the authors noted across he board increases in both categories. The party organizations were becoming better-funded, more professional outfits, equipped to provide candidates with electorally useful services. Making candidates dependent on these services,

and particularly dependent on access to donor networks, I argue, allows the party organization to propagate party procedures and increase party discipline.

Though the organizations at all levels were strengthening over this period, there was some question of their ability to interact with one another. Streamlined integration of national, state, and local organizations, however, are critical to the national partys ability to effectively coordinate campaign activity and spread ideological messages to bolster the party brand. Gibson et al. (1985) noted that while national and state party organizations showed signs of increased integration (measured by transfers of money, shared use of staff, and other measures), local party organizational strength remained relatively independent of national and state organizational strength. The smaller budgets of local parties meant that they could not afford to hire paid staff, and thus required larger bases of activist (i.e. local interest) support to perform their functions (Gibson et al. 1985). In the 1960s-1970s, these activists were thought to be primarily driven by attachments to candidates, making local party organization strongly contingent on the presence of passionate interests, and competitive candidates.

When Gibson et al. (1989) updated their panel survey with data from the mid-1980s, however, the dynamics of party organization appeared to be changing. Results from this data indicated that national and state party leaders had begun investing more time and resources in the development of strong local parties, and that these efforts had been largely successful in increasing party organizational strength. A case study of Illinois Republicans by Schwartz (1990) corroborated these results. National party organizations provided more funding and training to state and local organizations, giving the national committees greater control over local party programmatic activity. Party organizations also began coordinating their activities with third party forces, such as consultants and political action committees. This challenged the theory espoused by Sabato (1981) and others that the rise of private political consultants would further threaten the ability of parties to coordinate candidate activities.

As parties integrated, they became more involved in the recruitment of candidates. Frendreis et al. (1990) found that increased local party organizational

power significantly increased the probability that the party would offer challengers for local, state, and Congressional office. Weak parties relied on candidate self-selection for these offices, and often could not field candidates. With the aid of national and state party money, however, more candidates were recruited and more offices became competitive. Dulio and Garrett (2007) further found that the activities state and local party organization significantly increased the professionalism of campaigns.

While Gibson and his colleagues were examining the increasing growth and integration of state and local organizations, others noted the increasing roles of national party organizations in aiding congressional and senatorial candidates, and in coordinating activity with the lower-level organizations. Herrnson (1986), in a survey of House candidates conducted in 1984, found that national campaign party committees, particularly the DCCC and RNCC, supplied candidates with a variety of services, including technical expertise, connections in the Washington community, research support, advertising, issue-development, and fund-raising. With an increasingly sophisticated organizational structure, providing increasingly important services to candidates, the national committees laid out an infrastructure that could influence which candidates ran for office, and define the issue agendas on which they chose to run. Success in these activities, I argue, is crucial to a partys ability to effectively implement national strategies and enhance the party's ability to pursue programmatic goals.

Campaign finance laws limited the amounts and types of aid that party organizations could offer candidates. Though parties had increasing capacity to influence candidate behavior, campaigns remained largely funded by interest group donations and engineered by private consulting firms. Evidence suggests that parties coordinated, rather than rejected, the efforts of lobbyists and consultants (Herrnson 1986, Gibson, Frendreis & Vertz 1989). The increasing cost and technological complexity of campaigning gave party organizations an important function in candidate training, inspiring party organizations to hire and train staffers that fulfilled these functions (Herrnson 2002). When these staffers finished working for party organizations, they often took their knowledge to the private sector, opening

partisan consulting firms and lobbying groups. As this process iterated, it created a national partisan allegiance between current party organizational staffers and their former colleagues who had moved on to the private sector. Bibby (2002) notes similar coordination developing between PACs, consultants, and party organizations on the state level.

First, the seeding of interest groups and consulting firms with partisans made them more loyal (Edsall 2006). It allowed the national parties greater control over the interests, adopting them into the party procedural culture and making them less likely to rebel against actions taken by party leadership. Second, the existence of friendly private sector firms meant that ambitious activists could look forward to lucrative private sector employment in return for their years spent toiling on less lucrative party committee staffs. National parties colluded with their core interest groups and most trusted consultancy firms in an effort to consolidate existing party coalitions. Evidence that I presented in Chapter 2 corroborates these results, suggesting that unaffiliated PACs, despite exploding in population over the past 20 years, have not successfully threatened the dominant centrality of national party committees in campaign finance networks.

Apart from developing powerful partisan relationships with consultants and PACs, party organizations have come to employ another tool to pursue party unity. Through the course of their candidate-centered campaigns, Congressional candidates, particularly strong incumbent candidates typically amass substantial campaign war chests sums of money that far outstrip what is necessary for a safe incumbent to win reelection. This provides party organizations with the incentive to facilitate transfers of funds between Congressional campaign organizations. Monroe (2001) argues that party organizations at the state and local level have increasingly taken on the role of facilitating the transfer of money from rich campaigns to poor ones. A robustly organized national party could facilitate such transactions on an even broader scale, creating not only a more efficient distribution of funds, but also creating mutual dependence between Congressmen.

There is some evidence, furthermore, that national party campaign committees, such as the NRCC and DCCC have reaped the benefits of campaign surpluses,

as safe incumbents have become more and more willing to cede their extra funds to party coffers (Larson 2004). Dwyre et al. (2007), further show that, as of the 2004 election, the DCCC and NRCC had adopted rules that forced safe incumbents to donate funds to the party campaign committees. Studies have also shown that successful fundraising is crucial for congressmen with ambitions to committee chairmanships and party leadership roles (Heberlig 2003, Heberlig, Hetherington & Larson 2006). These new rules and norms reflect the intensifying need for parties to develop larger and better-coordinated campaign finance networks, especially in the face of powerful restrictions on fundraising. Furthermore, these rules provide the national party organizations with another tool to modify the behavior of the Congressional caucus. By making donations to party campaign committees part of party rules, or making such donations a prerequisite for advancement in the party, party leaders can extract both greater unity and greater funding from their members. More indirectly, these requirements condition the electoral environment, providing a strong signal that cooperative candidates will be rewarded with access to a greater breadth of the party campaign finance base.

Despite evidence that national party organizations were consolidating their power by integrating with state and local parties to coordinate candidate recruitment, fund raising, issue-development, and a variety of other programmatic functions, and despite the increasing evidence of collusion between national party committees, interest groups, and consulting firms, studies of the effects of party organizations struggled to find direct relationships between party activity and electoral outcomes. Crotty (1971) found some evidence that party effort explains variance in voting behavior, but his study did not disambiguate campaign effort from party organizational effort. Frendreis et al. (1990) found though party organization significantly impacted candidate recruitment, it showed no significant impact on vote totals. Pomper (1990) finds a modest impact on voting, but also emphasizes the recruitment and training functions of party organizations. Hill and Leighley (1993) similarly find no direct effect between party organizational strength and turnout and gubernatorial elections, though they do find an effect for competitiveness and candidate ideology.

The strategic behavior of national and state party organizations, furthermore, makes estimating the direct effect of organizational strength on party discipline even more difficult. Numerous studies (Herrnson 1986, Herrnson 1989, Jacobson 1985-1986, Maisel, Maestas & Stone 2002) conclude that parties make their decisions to allocate national party funds to Congressional campaigns overwhelmingly on the basis of district competitiveness. Though evidence suggests that increased organization has made the organizations increasingly effective at targeting and supporting competitive races (Jacobson 1985-1986, Herrnson 1989), it is clear that the party organizations privilege electoral victory over preference homogeneity. Given that majority status, and the negative agenda control powers that it entails, is a prerequisite to the adoption of any positive party agenda, this ordering of priorities is expected. Nevertheless, these authors draw the same conclusion: Congressional elections are candidate-centered, and not party-centered.

Questions of candidate-centered versus party-centered elections, however, are fundamentally questions of voter perception. Voter perceptions and candidate realities, however, are not necessarily related. This paper does not claim that party organizations impact vote totals or voter turnout in the aggregate. If one believes that party organizations have the incentive to pursue product differentiation and mobilize core supporters rather than the mass electorate, then one would not necessarily expect vote totals, or aggregate voter turnout, to increase. Rather, one would expect vote totals to increase among those core groups that the party organization has targeted. Rosenstone and Hansen (1993) and Holbrook and McClurg (2005) find evidence that parties seek primarily to mobilize core supports, and that these efforts are largely successful. Furthermore, while parties tend to allocate money primarily to competitive elections, the benefits of party organization extend far beyond simple monetary transfers. Candidate recruitment, candidate training, networking contacts, donor databases, and issue development services are functions performed increasingly by all levels of party organization and are available to all candidates, regardless of competitiveness. These services are significant for how they impact the mobilization of the party base and increase party discipline, and not for how they generate mass support.

Cantor and Herrnson (1997) look for a relationship between a candidates use of party services, and that candidates party loyalty once in Congress . Their results are mixed. They find no evidence that previous party unity in Congress impacts an incumbents chance of receiving aid in the future. They further find that candidates who received aid are no more loyal on normal roll-call votes than those who did not receive aid. They do, however, find that Democratic candidates who received campaign support were more loyal on key roll-call votes. The authors ultimately conclude, therefore, that party organizations predominantly concerned with electoral success, and not with preference homogeneity. Their study, unfortunately, lacks the theoretical subtlety necessary to draw strong conclusions about the power of party organizations. Their hypothesis assumes that parties need organizational carrots and sticks to keep potential wayward legislators in line. It also makes an assumption, common among previous studies of the impact of party organizational activity, that party organizations fundamentally misunderstand their institutional position, and attempt to control the behavior of legislators directly through the provision of campaign funds.

4.2   Operationalizing the Theory

In Chapter 1, I propose that party organizations are certainly aware of their weak institutional position, and do not expect to control candidates directly. Rather, I argue, the pressure for candidates and legislators derives from the value of the campaign finance networks, and other services provided to candidates.

One way that party organizations may influence the behavior of their congressmen is by helping them amass needed campaign funds. Though the party organizations have limited ability to raise and spend money on behalf of candidates, they serve an important function by providing candidates with connections to party-friendly PACs and individual donors (Herrnson 2009). Here, I argue that in order to effectively utilize these connections, candidates must take policy positions, or be willing to participate in compromises with fellow partisans, that will inspire party-friendly PACs to make donations, as PACs are primarily interested

in party connections for their policy implications. The development of highly ideological individual donor bases, I argue, further assists the candidates in this regard by providing them with access to an increasingly connected network of individuals whose contributions come without programmatic policy attachments and are directed most effectively towards those candidates who toe the ideological line of the party leadership.

As the connections between party organizations and candidates increase, therefore, I hypothesize that we should see a corresponding increase in party cooperation when those candidates are elected to Congress. In this section, I operationalize the theoretical relationship between party organizational strength, campaign finance network connectivity, and the legislative behavior of members of the United States House or Representatives.

4.2.1   Independent Variables

The key independent variables in these analyses fall conceptually into three categories: organizational strength, candidate connections to party organizations, and candidate connections to the broader party campaign finance network. A complete list of key variables is provided in Table 4.1

The first category includes measures of the organizational strength and national integration of party organizations at the state level. The conceptual and empirical bases of these variables *state party organizational strength* and *national integration of state party*, are explained in detail in Chapter 3. The organizational strength measure is constructed using principal components analyses of variables that capture the extensiveness of state party committee campaign finance networks, and the centrality of state party committees within those networks. The integration measure considers the degree to which state party committee campaign finance bases mirror those of the national committees.

The second category of measures assesses the level of connection between House candidates and their party organizations at the state and national level. Rather than measuring the amount of money transferred between party committees and their candidates, as previous studies have done with few concrete results,

I measure the connection between organizations and candidates according to the level of similarity of their PAC and individual donor bases in the campaign finance networks. These variables are referred to as *national committee similarity*, *congressional committee similarity*, and *state committee similarity*, and are measured in both the DCON and SID networks.

Table 4.1: A list of key independent variables for use in regression analysis, organized by conceptual categories.

Key Independent Variables	
Party Organizational Strength and National Integration	
I1	State Party Organizational Strength
I2	State Party National Integration
Candidate Integration with Party Organizations	
I3	Similarity with National Committee, DCON Networks
I4	Similarity with National Committee, SID Networks
I5	Similarity with Congressional Committee, DCON Networks
I6	Similarity with Congressional Committee, SID Networks
I7	Similarity with State Committee, DCON Networks
I8	Similarity with State Committee, SID Networks
Candidate Integration in Party Campaign Finance Network	
I9	Mean Similarity with Party Nodes, DCON Networks
I10	Mean Similarity with Party Nodes, SID Networks

The specific measure of similarity I employ is called inverse log-weighted similarity (Lada & Adar 2003), and is a common measure of the similarity between nodes in network analysis. Similarity in this context refers directly to the number of common neighbors that the two nodes have, which is precisely the concept we are trying to measure in this case. However, rather than simply summing the number of common neighbors between two nodes, inverse log-weighted similarity weights the contribution of shared neighbors to similarity score by the inverse logarithm of their degrees in the network, where degree is equal to the total number of connections the shared neighbor has in the network. The intuition behind this weighting scheme is that low-degree shared neighbors should have greater weight because these neighbors are less likely to connect other nodes by chance. Shared connections with a high-degree neighbor, being more likely to occur by chance, are given less weight in the similarity calculation. The formula for inverse log-weighted similarity between two nodes, i and j, may be expressed as $sim_{ij} = \sum_k \frac{1}{\ln(d_k)}$, where nodes k are the common neighbors of nodes i and j, and d_k is the degree of node k.
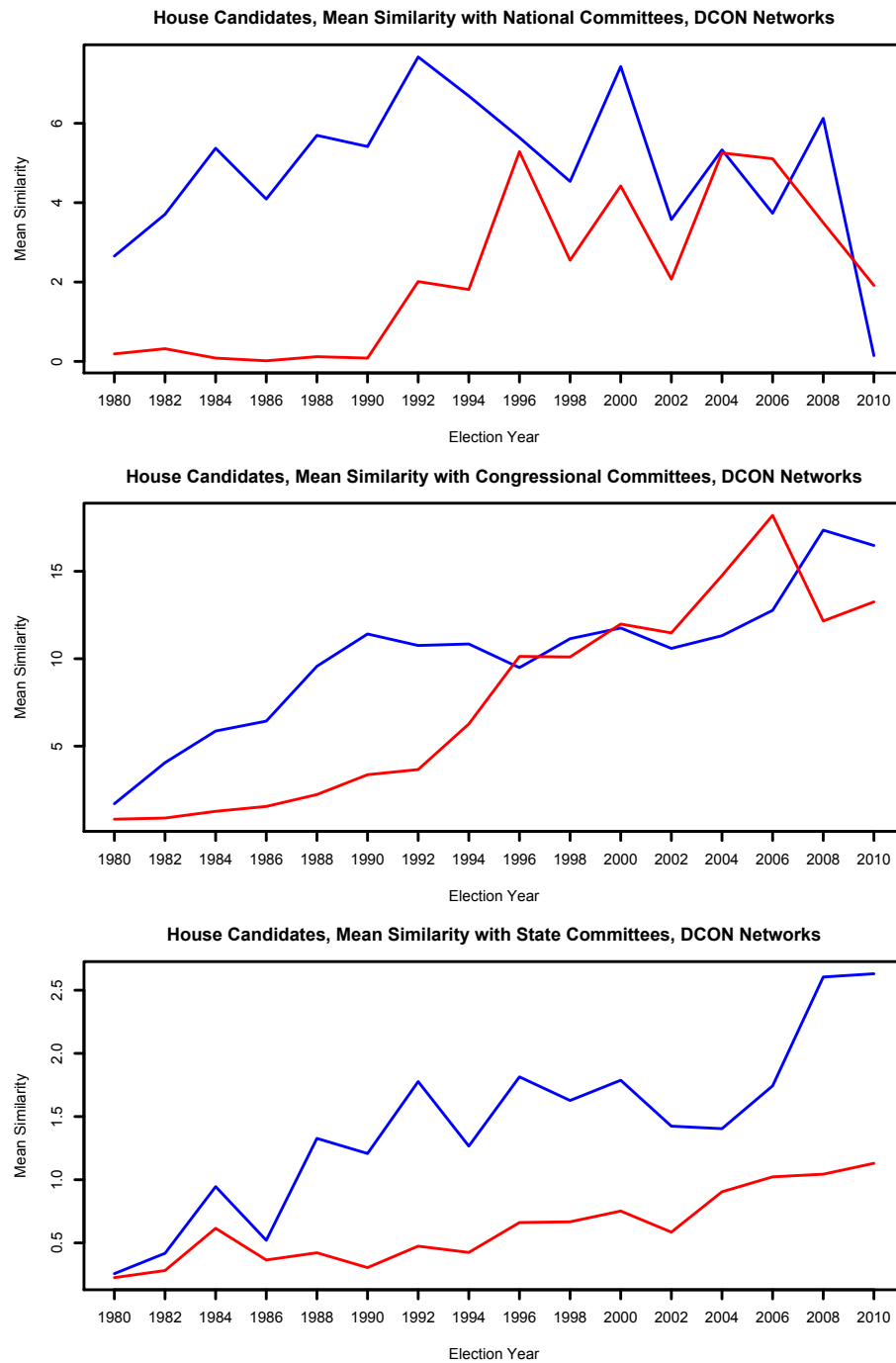
Figure 4.1: [Color online] Mean inverse log-weighted similarity of Democratic and Republican general election House candidates to their National (top), Congressional (middle) and State (bottom) Committees in the DCON Networks.
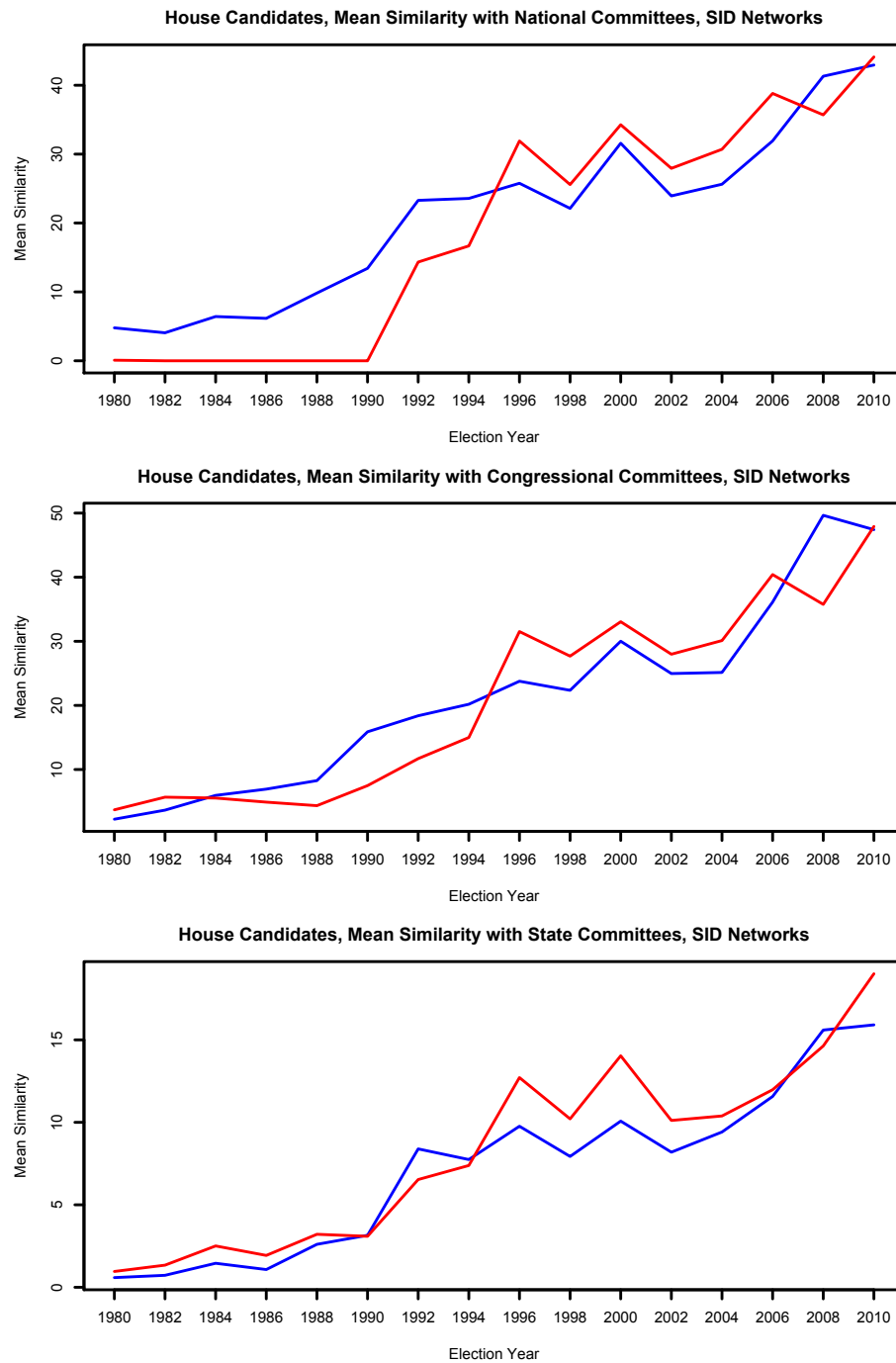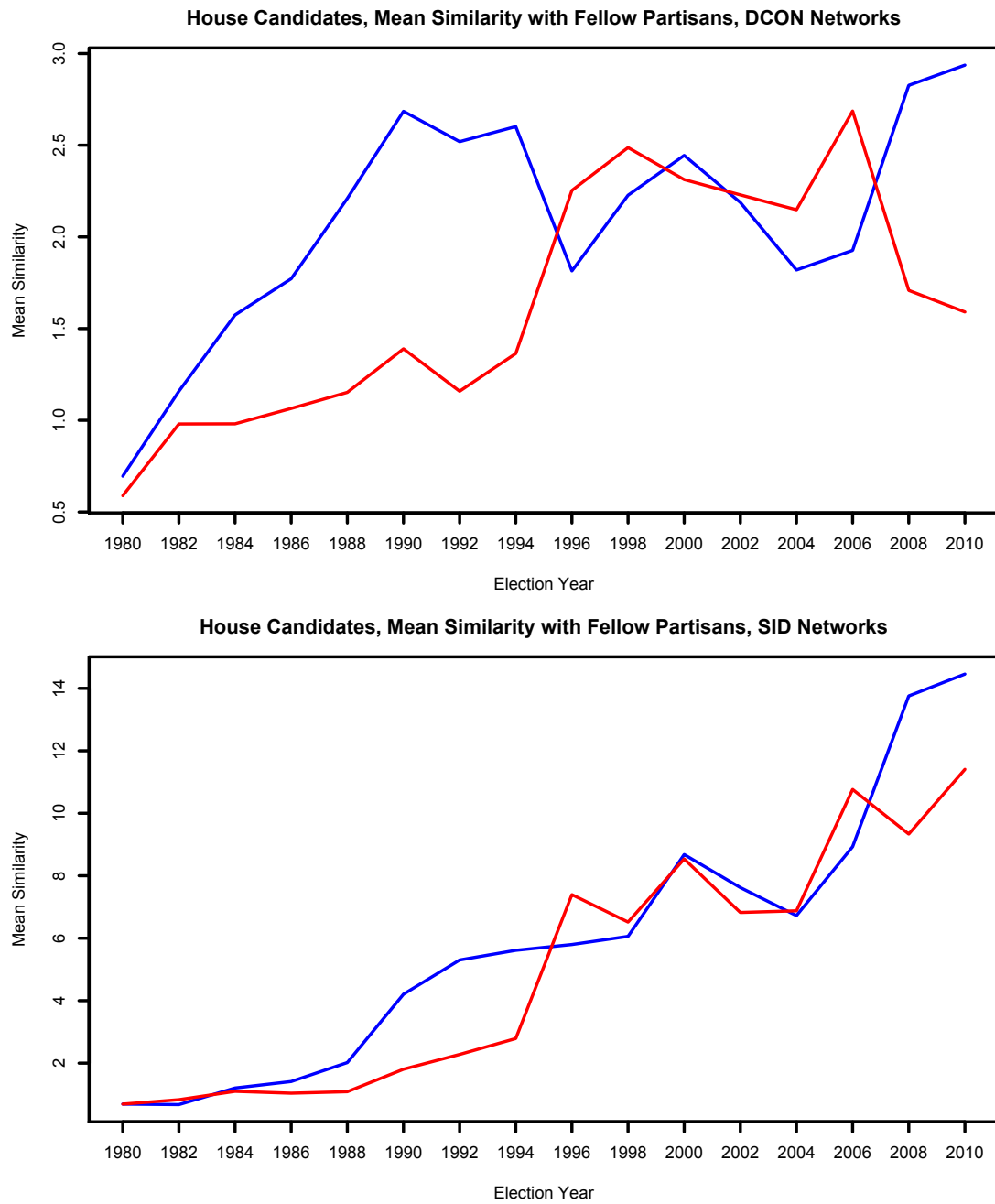
Figure 4.2: [Color online] Mean inverse log-weighted similarity of Democratic and Republican general election House candidates to their National (top), Congressional (middle) and State (bottom) Committees in the SID Networks.

In Figures 4.1 and 4.2, I chart the mean inverse log-weighted similarity of Democratic and Republican general election House candidates to their national and state committees in the DCON and SID networks, respectively. From Figure 4.1, it is apparent that House candidates in both parties have grown substantially more similar to their state and congressional party committees over time in the DCON networks, while similarity with national committees has been less consistent. This finding is to be expected, given that the congressional committees are the primary national party organizational actors charged with managing House campaign activity. In the SID networks, Figure 4.2 demonstrates that House candidates have become substantially more similar to their party organizational committees, with particularly large increases occurring after the Republican House takeover in 1994, and following the adoption of BCRA reforms in 2004. These findings are consistent with evidence in Chapter 2 demonstrating the increasing connectivity and partisanship of campaign finance communities.

The third category of measures characterizes the degree to which House candidates are integrated into their broader party campaign finance networks. My theory implies that the benefits of party organizational strength should be realized throughout party donor networks, and not fully contained in the relationships between candidates and party organizations. In order to assess the general level of integration of House candidates with their fellow partisans in the DCON and SID networks, I again use the inverse log-weighted similarity measure. Here, however, rather than measuring the similarity between House candidates and any particular other node, I look at the mean similarity of House candidates with all other party nodes in their networks. For example, consider node i to be a Republican House candidate. In this case, we would calculate the inverse log-weighted similarity of i to all other Republican nodes, $r \in R, r \neq i$, and take the mean of the resulting similarity scores. House candidates with high levels of mean similarity are those who are able to more successfully attract donations from donors who also contribute to other partisans, suggesting that these candidates are highly integrated into the party campaign finance networks. I argue that these well-integrated candidates have a stronger incentive to cooperate with leadership goals when they reach the

Figure 4.3: [Color online] Mean inverse log-weighted similarity of Democratic and Republican general election House candidates to all other fellow party nodes in the DCON (top) and SID (bottom) networks.

House.

Figure 4.3 presents time series plots of the mean similarity scores of Democratic and Republican House candidates to all of their fellow party nodes. In these charts, we again see dramatic increases in similarity since the 1980s, showing that increasingly connected campaign finance networks have, in general, had the effect of making the donor bases of the parties more similar to one another. This is a more specific manifestation of the evidence presented in Chapter 2 demonstrating the increasingly partisan nature of campaign finance communities. Here we see that not only are campaign finance networks becoming more partisan, but also that the increased partisanship is associated with greater attachment of House candidates to their party's financial supporters. These increases in similarity suggest that House candidates have an increasing financial incentive to cooperate with party goals in order to realize the full electoral benefits of the more partisan networks.

4.2.2 Dependent Variables

In this section, I discuss dependent variables related to the legislative activity of House members that my theory suggests should affected by changes in the independent variables outlined above. After defining these dependent variables and explaining their connections to my theory, I derive a series of hypotheses which I proceed to test in Section 4.3.

The first dependent variable I consider is *party connectedness*, which represents the degree to which House members are connected to other members of their party via the cosponsorship of legislation. I calculate party connectedness using data on Congressional cosponsorships compiled from the Library of Congress THOMAS database. The concept and formula for party connectedness come from Fowler's (2006) measure of legislative connectedness. Legislative connectedness is a weighted measure of closeness centrality that uses information about sponsor-cosponsor connections between pairs of legislators, and weights them by the number of total cosponsors on a given bill, and the number of times that one legislator cosponsors a bill that is sponsored by another. In Fowler (2006), connectedness scores estimate the degree to which each member of the House is connected to

every other member of the chamber, regardless of party. Here, I calculate the level of connectedness between members of the House and their fellow partisans only, resulting in a measurement of party connectedness, as opposed to overall connectedness.

The calculation of party connectedness begins by assembling an adjacency matrix of the weighted sponsor-cosponsor associations between every pair of legislators in a given party. For each cosponsor i, and sponsor j, the weighted association is the sum, $w_{ij} = \sum_l a_{ijl}/c_l$, where a_{ij} equals 1 if i cosponsored bill l and 0 otherwise, and c equals the total number of cosponsors on bill l. The inverse of these weights is assumed to be the direct distance between legislators i and j, $d_{ij} = 1/w_{ij}$. With this matrix of distances, d_{ij}, it is possible to calculate the shortest distance between any two legislatures using Dijkstra's algorithm (Cormen, Leiserson, Rivest & Stein 2001, Fowler 2006). This algorithm allows for the possibility that the shortest path between i and j may include intermediaries. The result of this algorithm is a $N \times N$ matrix of shortest distances between each legislator pair. Party connectedness, finally, is computed by averaging the distances from all other legislators to legislator j and taking the inverse, represented by the equation

$$connectedness_j = (n - 1)/(d_{1j} + d_{2j} + ... + d_{nj}). \qquad (4.1)$$

Party connectedness thus captures the weighted distances between Congressmen and members of their own party exclusively, providing us with a measure of the cohesion of Congressmen to their party legislative caucus.

Party connectedness offers two key advantages in the search for the influence of party organizations on legislator behavior. The primary advantage is the number of observations used to create the measures. While very few bills come to a roll call vote in Congress, and even fewer meet the standard for a party unity vote, all sponsored bills in Congress have the opportunity to garner support via cosponsorships. This gives legislators thousands more opportunities to reveal their preferences, affiliations, and partisan loyalties. Given the overall high level of partisanship exhibited on roll call votes over the past 30 years (McCarty, Poole &

Rosenthal 2007), it is difficult to separate the influences of party from those of ideology (Snyder & Groseclose 2000, Ansolabehere, Snyder & Stewart 2001b, Cox & Poole 2002), and nearly impossible to separate the influences of the party in government (e.g. pressure from leadership) from the influences of party as organization. Increasing the number of observations provides an opportunity for legislators to reveal higher dimensionality in their behavior (Talbert & Potoski 2002).

The second advantage of these cosponsorship-based measures involves the quality of cosponsorship behavior itself. Previous research has shown that cosponsorships are coveted by sponsors (Campbell 1982), that they allow bills to survive longer in the legislative process (Wilson & Young 1997), and that they serve as powerful intra-legislative cues to fellow Congressmen and are not simply cheap talk to constituents (Kessler & Krehbiel 1996). Importantly, there is little evidence that party leaders in Congress attempt to directly control cosponsorship behavior as they do roll call behavior (Campbell 1982). Despite the persistent multidimensionality of cosponsorship behaviors and the lack of leadership control over cosponsorship decisions, however, community detection analyses of cosponsorship decisions, similar to those conducted on the campaign finance networks in Chapter 2, have found evidence that cosponsorship behavior has become increasingly partisan over time (Zhang et al. 2008). The theory presented here suggests that party organizational activity may be helping to drive the increasingly partisan nature of cosponsorship behavior.

The established importance of cosponsorships suggests that parties would be interested in selecting new members who are likely to be active cosponsors, and especially cosponsors of party bills. The fact that party leaders seem to exert little control over this behavior, furthermore, leaves open the possibility that the party organizations may use their support tactics to support candidates who are either predisposed to be active cosponsors, or whose cosponsorship activity may be induced by integration in the party campaign finance network, for the purposes of increasing intra-party cooperation on the floor, and enhancing the party's ability to advance programmatic policy. Therefore, I argue that any influence of party organizational activity on party connectedness should therefore be interpreted as

the effectiveness of party organizations in generating House members who are able to coordinate and advance positive agendas.

The second dependent variable I examine is *party unity score*. Party unity score, as defined by McCarty et al. (2006), is a popular measure of party loyalty for studies of party impacts on congressional behavior (Cantor & Herrnson 1997, Snyder & Groseclose 2000, Ansolabehere, Snyder & Stewart 2001*b*, Cox & Poole 2002). Party unity score is equal to the proportion of times that a congressman votes with his party on votes in which the two parties are substantially opposed, with at least 50% of one party voting against at least 50% of the other party (McCarty, Poole & Rosenthal 2007). Due to the fact that party loyalty on roll call votes is heavily influenced by the agenda control powers of party leaders, the party unity score of most House members for most recent congresses is very high, making it difficult for regression analyses to discern differences among members when controlling for estimates of member ideology, such as DW-NOMINATE. This, I have argued, is one likely reason that Cantor and Herrnson (1997) found little evidence that party activity influences the loyalty of House members. However, in my analyses, I have the advantage of measures of party organizational strength that are measured across 16 electoral cycles, providing many more data points from which to determine an impact of party organizational activity on party unity. Furthermore, given the intense influence of party leadership on roll call votes, I argue that party unity score is best thought of as the willingness of House members to support the negative agenda control powers of their floor leadership.

4.3   Analysis

Here I conduct empirical tests of the impact of party organizational activity on legislative behavior in the House using linear mixed-effects regression analysis. The data that I employ cover every federal electoral cycle and subsequent Congress from 1980 to 2010. Most of the variables under consideration are measured at the legislator or congressional district level. However, two of my key independent variables, state party organizational strength and state party national integration, are

measured at the state level. Having a time-series/cross-sectional data set with variables measured at multiple hierarchical levels, I require a regression specification that will estimate appropriate coefficients and standard errors for my key variables by accounting for the different levels at which my variables are measured, and the likely presence of autocorrelation in those variables across time.

Linear mixed-effects regression is well-suited to this task, as it allows for estimation of cross-time and cross-level variation to be modeled as random effects, ensuring appropriate estimations of the coefficients and standard errors of the explanatory variables as fixed effects (Gelman & Hill 2007). In these data, the explanatory variables are measured at two categorical levels (legislator and state) across sixteen time periods (even years from 1980-2010),and we have good reason to expect that the repeated measurements of our explanatory variables measured at either will correlate across time. In this case, the appropriate modeling choice is to estimate random effects for the slope and intercept of the dependent variable, with respect to time, at both the state and legislator levels. This is easily accomplished using a number of readily available statistical software packages. In this case, I employ the *lme4* package in R. Having accounted for the within-level and across-time variability in the time-series/cross-sectional data using random effects, the resulting fixed effects coefficients and standard errors of the linear mixed-effects specification should appropriately reflect the overall impact of the explanatory variables on the key dependent variables.

In addition to the key independent variables described earlier, and the random effects explained above, I also need to account for a number of confounding factors that are likely to influence the relationship between party organizational activity and party connectedness and party unity. First, I wish to control for any effect that ideology might have on legislative behavior and the effectiveness of organizational activity. To control for ideological extremity, I include the absolute value of the House member's 1st-dimension DW-NOMINATE score in my analysis (Poole 2005). Second, I need to account for the differences in legislative activity that may be attributable to Representatives occupying floor and committee leadership positions. Thus, I include dummy variables *floor leader*, and *commit-*

tee leader, which indicate whether the member in question is a member of her party's floor leadership, or the chair/ranking member of a committee, respectively. Third, because I expect that new members are likely to be generally less involved in cosponsoring legislation than more senior members, and that freshmen members are likely to exhibit higher levels fo party unity, I include a dummy variable indicating whether or not the member in question is a *freshman*. Fourth, to control for the general level of legislative activity of the member, I include a variable measuring the total number of *bills cosponsored* by that member.

Fifth, I include a number of controls characterizing the conditions of the campaign under which the member was elected. I include measures of the candidates *total receipts* of campaign funds, and the amount of money that the candidate received from party sources, *party total*. Additionally, I control for the overall breadth of support that the member had in the SID and DCON networks, including normalized estimates of degree centrality for the member in each network, *DCON degree* and *SID degree*. I also control for the closeness of the election by including the member's *two-party vote share*, and include a measure of the closeness of the most recent two-party Presidential vote in the district, *Presidential competitiveness*, in order to account more generally for the level of major party competition in the district. Finally, I account for party differences by including a dummy variable indicating whether the member is a *Republican* and to account for any time trend, I also include the *year* as a control.

4.3.1 Party Connectedness

In the first regression analysis, I examine the effects of my key party organizational activity variables on the *party connectedness* dependent variable. I hypothesize that House members who come from states with strong party organizations, who are well-connected to their national and state party committees, and who are well-integrated with their broader party campaign finance network, will be more active cosponsors of legislation proposed by their fellow partisans, resulting in higher levels of party connectedness. The fixed-effects results of the linear mixed-effects regression model for party connectedness are presented in Table 4.2.

Table 4.2: Fixed effects coefficients and standard errors for mixed-effects linear regression specification. Significance estimates are calculated using Type II Wald tests. Random effects are not displayed but are available upon request.

	DV: Cosponsorship Party Connectedness			
Independent Variables				
#	Variable	*Est.*	*S.E.*	
I1	State Party Organizational Strength	0.0016	0.0007	*
I2	State Party National Integration	-0.0003	0.0008	
I3	NC Similarity DCON	0.0004	0.0002	
I4	NC Similarity SID	-0.0007	0.0001	***
I5	CC Similarity DCON	0.0001	0.0002	
I6	CC Similarity SID	0.0007	0.0002	***
I7	State Committee Similarity DCON	-0.0009	0.0006	
I8	State Committee Similarity SID	-0.0004	0.0001	***
I9	Party Similarity DCON	-0.0025	0.0013	.
I10	Party Similarity SID	0.0018	0.0005	***
Control Variables				
#	Variable	*Est.*	*S.E.*	
C1	|DW-NOM 1st Dimension|	0.0146	0.0055	**
C2	Committee Leader Dummy	0.0120	0.0022	***
C3	Floor Leader Dummy	-0.0167	0.0073	*
C4	Freshman Dummy	-0.0016	0.0002	***
C5	Total Campaign Receipts ($100K)	0.0006	0.0002	***
C6	Total Party Support ($100K)	-0.0083	0.0055	
C7	Normalized Degree DCON	0.1295	0.1199	
C8	Normalized Degree SID	-0.2480	0.0563	***
C9	# of Bills Cosponsored	0.0001	0.0000	***
C10	Two-Party Vote Share	0.0378	0.0086	***
C11	District Presidential Closeness	-0.0004	0.0001	***
C12	Republican Dummy	-0.0031	0.0024	
C13	Year	0.0015	0.0002	***

Significance codes ($p <$): *** 0.001, ** 0.01, * 0.05, . 0.1.

Of the ten key independent variables five are found to have a significant impact on the cosponsorship party connectedness of House members, and a sixth variable approaches significance. Of the five significant coefficients, however only three carry the expected positive sign: CC similarity in the SID networks (I6), party similarity in the SID networks (I10), and state party organizational strength (I1). The other two significant coefficients, NC similarity SID (I4), and state committee similarity SID (I8), are negatively signed. Meanwhile, state party national integration and all three national committee similarity measures for the DCON networks are not found to be significant.

Let us consider the coefficients for the party committee similarity variables (I3-I8). Here we note first that a House member's similarity with the national and state committees in the DCON networks has no significant impact on party connectedness in cosponsorships, while the member similarity with those committees in the SID networks is strongly significant. The literature on cosponsorships provides us with one reasonable substantive interpretation of this result. Scholars of legislative behavior have long argued that one of the primary uses of cosponsorships is as a signal to constituents about the legislative intentions and allegiances of the member (Kessler & Krehbiel 1996). Additionally, many members in modern congresses hail from districts where strong signals of party loyalty are necessary to keep donor bases active, and discourage challengers in both primary and general elections. These members have an incentive to cosponsor bills drafted by their fellow partisans in order to signal their party *bona fides* to their donor bases.

Members individual donor bases that are highly similar to their congressional committee are likely to have a particularly strong incentive to send such signals, knowing that a substantial number of their individual donors are also contributors to the congressional committee. Indeed, it is precisely this type of dependency that my theory suggests party organizations attempt to generate as they develop individual donor networks and integrate their legislative candidates into them. The positive and significant coefficient on the CC similarity SID variable (I6) thus makes logical sense both from the perspective of previous research and the current theory under consideration.

Similarly, the lack of significance for similarity with party committees in the DCON networks may be attributed to the fact that the economically-motivated PACs whose decisions are captured in the DCON networks are not particularly interested in cosponsorship behavior. To the extent that they are interested, furthermore, these PACs may not be especially interested in the partisan connectedness of members, but rather in the ability of members to forge inter-party relationships. For example, we saw in Chapter 2 that the DCON networks, though becoming more partisan over time, are substantially less partisan than the SID networks. This corroborates the idea that PACs are more interested in access to Congress generally, and not especially motivated to increase partisanship. Additionally, studies have shown that one of the primary legislative benefits of cosponsorships is that they help advance bills out of committee (Wilson & Young 1997). However, economically-minded groups are likely to find this benefit less important, as many of these groups employ lobbyists to shepherd their favored legislation through committee.

The above logic does not explain why we should find negative coefficients for the NC and State Committee similarity variables (I4, I8). The negative coefficients on these variables, I believe, are attributable to the differing strategic concerns of the NCs and State Committees as opposed to the CCs. The congressional committees, being explicitly charged with overseeing the party's House campaigns, and being managed by members from those House party caucuses, have a powerful interest in developing donor networks that will not only yield House majorities, but also elect members who are likely to cooperate with the wishes of the existing party leadership in the House.

The national and state committees, on the other hand, have primary interests in presidential elections and state-level elections, respectively, and are therefore likely to develop donor networks that reflect their primary strategic objectives, which may or may not align well with those of the congressional committee. Though these committees share the desire of the congressional committee to achieve House majorities, they are not likely to be particularly concerned with the level of cooperation in their party House caucus. In times of conflict among levels

of party organization, committees may even be hostile to the idea of their House members cooperating too much with the party caucus. As a result, the involvement of these committees in congressional campaigns is likely to be restricted primarily to pursuing majorities, ignoring concerns of positive agenda control on the House floor.

Supposing that the individual donor bases developed by the national and state committees share these objectives, and concentrate their contribution efforts on vulnerable incumbents and promising challengers, their activity may help elect members who are less concerned with party loyalty, as reflected would be reflected in the party connectedness variable, and more interested in catering to constituency concerns in order to retain their seats. In this scenario, we would expect to see a negative relationship between national and state committee SID similarity and party connectedness. Similar logic explains why we find significant and negative relationships between two-party vote share (C10) and the closeness of district-level presidential votes (C11). These coefficients indicate that members who face competitive elections are less well-integrated into party cosponsorship networks, presumably because those members are wary of appearing too close to their party and instigating a backlash among their constituents (Canes-Wrone, Brady & Cogan 2002).

Next, let us consider the independent variables assessing the broad level of similarity that House members have with other partisans in the DCON and SID networks (I9, I10). Here we find that the Party Similarity SID (I10) coefficient is significant and positive, as hypothesized. Substantively, this finding means that House members who share larger numbers of individual donors with a broader coalition of their fellow partisans are likely to be more active cosponsors of legislation sponsored by members of their House party caucus. The logic for this finding derives directly from my theory of party organization, in which I argue that national political parties have an incentive to develop networks of individual donors who are committed partisans and encourage those donors to contribute broadly to House members who are likely to cooperate well with the party caucus. The findings of increasingly well-integrated and increasingly partisan individual

contribution networks discussed in Chapter 2 suggested that the parties have been successful in creating these networks, and the bottom panel of Figure 4.3 indicates that these networks have had the effect of making the individual donor bases of fellow partisans more similar over time. The positive significant coefficient on the Party Similarity SID variable confirms that the integration of party donor networks has had a positive impact on the level of cosponsorship connectedness of parties in the House.

Finally, we examine the variables measuring the organizational strength and national integration of state party committees (I1, I2). State party organizational strength is found to have a positive and significant impact on party connectedness, as expected, while national integration is not found to be significant. This finding indicates that strong party organizations contribute to the positive goals of the party House caucus by helping to elect members who are more connected to their party in their legislative behavior, regardless of the level of state party integration with the national party. This is an interesting result because it suggests that strong state parties may have a positive impact on national party objectives without needing to be especially dependent on the national party for their support base.

There are at least two reasons why we should expect this to be true. First, strong state party organizations, regardless of their overall level of dependence on the national parties, are likely to have support bases that substantially overlap with the national party, meaning that their preferences are likely to be better aligned with the national party regardless of integration level. Second, state party committees are certain to prefer that their House members occupy leadership positions and choice committee assignments, as more powerful members will be more successful at delivering legislative pork to the state, increasing the party reputation there. While loyalty has not been shown to be a consistent predictor of party financial support, it is increasingly necessary for members wishing to advance in the party leadership hierarchy (Cox & McCubbins 1993, Heberlig 2003). To that extent, state committees have a particular incentive to leverage their organizational power in support of candidates who are likely to participate actively in the party's House caucus, and who are likely to be active fundraisers and contributors

to other party campaigns.

In summary, the findings for the party connectedness regression are largely consistent with theoretical expectations, and notable inconsistencies have obvious theoretical explanations that do not threaten the core narrative of the theory under consideration.

4.3.2 Party Unity Score

The regression results for the second dependent variable, party unity score, also tell a fascinating story that is largely consistent with theoretical expectations. The fixed-effects coefficients for this regression are presented in Table 4.3. Of the ten key independent variables in this specification, seven are found to be significant. Five of these have the expected positive sign: state party organizational strength (I1), state party national integration (I2), NC similarity in the DCON networks (I3), CC similarity in the SID networks (I6), and party similarity in the DCON networks (I9), while two have a negative sign: NC similarity in the SID networks (I4), and party similarity in the SID networks (I10).

As in the previous discussion, we begin here by considering the variables dealing with member similarity to national and state party committees in the SID and DCON campaign finance networks (I3-I8). Of these six variables, two are found to have significant coefficients with the expected positive sign: NC similarity DCON (I3) and CC similarity SID (I4), while a third is found to have a significant and negative coefficient: NC similarity SID (I4). The substantive logic behind the positive coefficient for the SID congressional committee similarity variable is similar to that discussed in the previous section, for which the same variable also had a positive and significant coefficient. Members who have individual donor bases that are highly similar to that of the congressional committee, are likely to be rewarded among their constituents for voting in a way that conforms with the rest of their party caucus. As with the party connectedness regression, the negative and significant coefficient on SID similarity with the national committee is attributable to the organizational interests of the national committee in procuring congressional majorities regardless of the likely party loyalty of the members holding critical

Table 4.3: Fixed effects coefficients and standard errors for mixed-effects linear regression specification. Significance estimates are calculated using Type II Wald tests. Random effects are not displayed but are available upon request.

DV: Roll-Call Party Unity Score

#	Variable	Est.	S.E.	
Independent Variables				
I1	State Party Organizational Strength	0.3412	0.0902	***
I2	State Party National Integration	0.3235	0.1015	**
I3	NC Similarity DCON	0.1111	0.0314	***
I4	NC Similarity SID	-0.0554	0.0168	***
I5	CC Similarity DCON	-0.0358	0.0229	
I6	CC Similarity SID	0.2442	0.0235	***
I7	State Committee Similarity DCON	0.0527	0.0780	
I8	State Committee Similarity SID	-0.0084	0.0164	
I9	Party Similarity DCON	1.4087	0.1959	***
I10	Party Similarity SID	-0.7953	0.0750	***
Control Variables				
C1	|DW-NOM 1st Dimension|	39.2450	1.1558	***
C2	Committee Leader Dummy	-0.3563	0.3379	
C3	Floor Leader Dummy	1.7562	1.1095	
C4	Freshman Dummy	0.1266	0.0315	***
C5	Total Campaign Receipts ($100K)	-0.0434	0.0229	.
C6	Total Party Support ($100K)	0.7087	0.7235	
C7	Normalized Degree DCON	-106.5525	17.9418	***
C8	Normalized Degree SID	-2.3552	8.1784	
C9	# of Bills Cosponsored	0.0017	0.0007	*
C10	Two-Party Vote Share	11.5115	1.2440	***
C11	District Presidential Closeness	-0.0192	0.0163	
C12	Republican Dummy	-5.4515	0.4922	***
C13	Year	0.1339	0.0336	***

Significance codes ($p <$): *** 0.001, ** 0.01, * 0.05, . 0.1.

seats.

The positive and significant coefficient on the level of member similarity with the national committee in the DCON networks (I3) is a particularly interesting result. This variable was not found to be a significant predictor of party connectedness of cosponsorships, a fact which I attributed to the general lack of interest among economically-oriented interest groups in the cosponsorship activity of House members. The same interest groups who have little interest in cosponsorship activity, however, are likely to be intensely interested in the roll-call voting behavior, as the outcomes of roll-call votes directly impact the policy outcomes in which these groups may have an economic stake. It is therefore unsurprising to find significant effects for the DCON similarity variable in this context, as opposed to the party connectedness context. Given this logic, it is somewhat puzzling to find that the variable measuring DCON similarity with the congressional committee (I5) is insignificant in this regression. The insignificance of I5 may indicate either that the congressional committees are not actively engaged in developing cohesive interest group coalitions, choosing to leave that business to the national committee, or it may also be the case that the two similarity variables explain the same portion of variance in the dependent variable, making the inclusion of CC similarity DCON unnecessary.

Variables measuring member similarity to state committees in both networks (I7 and I8) are also found to be insignificant. This finding too may be attributed to the varying strategic interests of the state committees. State committee contribution networks, for example, are likely to be loaded with interests and individuals who have predominantly state level concerns. These interests may have comparatively little impact on member voting behavior when opposed to national level interests. Furthermore, the state level interests of members are likely to present sources of conflict within the party caucus. The negative and significant coefficient on state party SID similarity provides at least some evidence that this may be the case. In such a scenario, party leadership would have an incentive to exercise its negative agenda control powers to prevent state-level concerns from coming to the floor for roll call votes (Cox & McCubbins 2005).

Turning to the variables measuring the broad similarity of House members with their parties in the DCON and SID networks (I9, I10), we see that the both coefficients are significant, with the DCON measure having the expected positive sign and the SID measure having a negative sign. The explanation for the positive and significant sign for the DCON measure follows a similar logic to the positive sign found on the NC similarity measure for DCON networks. As House members share more of the same PAC donors with more of their fellow partisans, they face increasingly similar policy pressures from interest groups, and are therefore likely to have similar opinions on policy as their colleagues, leading to higher levels of party unity on roll-call votes. The negative and significant relationship between party similarity in the SID networks and party unity, however, is more difficult to explain, especially considering that this variable was positive and significant in the party connectedness regression.

We require a plausible explanation for why similarity with fellow partisans in individual donor networks would lead to greater cooperation on cosponsoring legislation, but less cooperation on resulting roll call votes on the floor. As with the negative signs on SID similarity with the NC and state committee in the previous regression, one potential explanation involves the electoral vulnerability of House members. Given the strategic incentive of parties to maximize seat shares, it is reasonable to suspect that members who have the highest level of similarity with their party in the SID networks are more likely to face stiff electoral competition, and that party organizational forces have responded by channeling individual contributions to those vulnerable members. Being vulnerable, these members have two incentives. First, they have a strong incentive to develop meaningful social connections with fellow partisans by cosponsoring bills, perhaps hoping to signal high levels of activity to their constituents, or attempting to curry favor with colleagues in order to gain access to future electoral support. Second, vulnerable members have an incentive to selectively deviate from their party on roll-call votes in order to emphasize their moderation to constituents, and avoid the appearance of being overly committed to their party. Party leaders, furthermore, have an incentive to allow these defections, when possible, in order to protect party control of the seat.

The former incentive would lead to higher party connectedness scores, while the latter would lead to lower party unity scores.

Finally, looking at the coefficients for the state party organizational strength and national integration variables (I1, I2), we find that both are positive and significant, as expected. This finding provides compelling evidence that stronger state party organizations that are better integrated with their national committees are more successful at electing House members who will toe the party line on roll-call votes, even when controlling for obvious confounding variables, such as district competitiveness and member ideological extremity. When combined with the finding from the previous regression that stronger state party organizations also lead to House members who are more cooperative in the crafting of legislation, we have the strongest evidence in the literature to date that the effects of party organizations extend beyond the mere maximization of seat shares to substantively affect the participation of members in both positive and negative aspects of party agenda control.

4.4   Conclusion

In this Chapter, I conducted empirical analyses of hypotheses derived from the theory of parties and party organizational activity that I outlined in Chapter 1. Whereas previous theoretical literature on party organizations argued that party organizations have little capacity to influence the behavior of candidates and congressmen due to powerful institutional restrictions, I reasoned that restrictions on campaign contributions, combined with the presence of fierce national party competition, enables party organizations play a crucial role in the development of campaign finance networks. Empirical assessment of these campaign finance networks, conducted in Chapter 2, demonstrates the increasing size, connectivity, and partisanship of campaign finance activity over time.

Further analysis showed that party organizations at the national level have long been the most central actors in these networks, and that the centrality of state party organizations has increased over time as the networks have become

more complex. These findings suggest that party organizations are becoming increasingly valuable as information brokers, by expanding party financial support bases and connecting them to deserving candidates. I subsequently argued that stronger party organizations, wielding more substantial campaign finance connections, would have the effect of conditioning the electoral environment, making campaign financing easier for those candidates who adopted policy and ideological positions that better reflected those of the national party, in whose image the campaign finance networks are modeled. The effect of this conditioning, I hypothesized, would be to increase the agenda control powers, both positive and negative, on the floor of congress.

In order to test this hypothesis, I employed principal components analysis in Chapter 3 to create new measures of party organizational strength and national party integration at the state level using data gathered from the campaign finance networks. Unlike previous measures of party strength at the state level, which were calculated at irregular intervals on incomplete subsets of state party committees, my measures are estimated for every state party committee in every federal electoral cycle from 1980 to 2010, substantially increasing the number of cases available for the empirical assessment of party organizational activity on legislative behavior. I combined these variables with measures capturing the similarity of House candidate donor bases to those of national and state party committees, also derived from the campaign finance networks.

Using linear mixed-effects regressions on two dependent variables: party connectedness in cosponsorships, and party unity on roll-call votes, I found evidence strongly suggesting that stronger party organizations at the state level lead to House members who are better connected to their fellow partisans in their cosponsorship behavior, and better unified with their party on roll-call votes. I found additional evidence that House members' donor base similarity with national and state party committees has significant impacts, some positive and some negative, on party connectedness and party unity. Careful interpretation of these results in light of the findings in previous chapters, and existing theoretical accounts in the party organizations literature, suggest the regression coefficients on

these similarity variables reflect obvious tensions between the two primary goals of party organizations: to maximize seats in Congress and thereby empower the party with negative agenda powers, and to encourage the election of members who will cooperate with the party leadership in order to enhance positive agenda powers.

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