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The Right to Party (Resources): Political Party Networks and Candidate Success

by

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Abstract

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How does the structure of political party organizations impact candidates in elections and the legislature? How does the position of candidates within the party affect their success? To address these questions in my dissertation, I use social network analysis to study candidates’ relationships and the context around those relationships. I measure party networks with campaign finance transactions in seven states for the 2010 and 2012 state legislative elections. After a case study of Texas parties that establishes the validity of my approach, I compare the structure of party networks across states. Although I discover that these networks are relatively sparse in general, my results also reveal that parties in states with competitive legislative chambers tend to be more connected. Finally, I explore how the party structure influences candidates. By drawing upon Ronald S. Burt’s (1992, 2005) structural holes theory, I identify influential actors and examine how their network position impacts their success in legislatures. I find that influential candidates in the electoral party network are more likely to become a legislative leader in the following session, demonstrating an important link between electoral and legislative politics.
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Chapter 1: Political Parties in American Politics: An Assessment

Introduction

“This election is too important to stand on the sidelines. That’s why I am doubling every dollar you donate today…. I’m throwing down my money today because I believe this is our year. So don’t let this moment pass you by. I need you to donate today.” – Texas Representative Trey Martinez Fischer, April 2014 Texas Democratic Party email

In April 2014, the Texas Democratic Party (TDP) sent out a fundraising email from Texas Representative Trey Martinez Fischer including the call for donations quoted above. In the email, Representative Martinez Fischer offered to match any donation given that day to the party committee. To match donations, Rep. Martinez Fischer will draw money from his own reelection account to donate to the TDP. In a time of candidate-centered campaigns (Bibby 2002; Goidel et al. 1999; Maisel and Brewer 2009), it is rather surprising that an incumbent, even one without a challenger, would donate scarce resources to the party. Historically, getting incumbents to contribute and support party committees was incredibly difficult (Heberlig and Larson 2005; Heberlig 2003; G. C. Jacobson 1985; Kolodny and Dwyre 1998). However, at least in more recent congressional elections, this type of fundraising by candidates for party organizations is fairly common (Currinder 2009; Heberlig and Larson 2012). In fact, state candidates contributed almost $89 million to state party committees in the 2012 election (National Institute on Money in State Politics 2014). Why, when they need resources for their own campaigns, do candidates contribute to party committees? How closely do candidates and party committees cooperate in elections? The answer to these questions may lay with the organization and current role of political parties in American politics.

Many scholars now view political parties as institutional solutions to collective action problems that arise during elections and in governance (Aldrich 1995; Heberlig
and Larson 2012), which ensures that parties matter in American politics. Parties organize (and perhaps simplify) voting behavior, structure policy positions and opinions of individuals, organize the electoral process, provide important resources to candidates, organize governing bodies (particularly legislatures), and influence legislative voting (which impacts the direction of policy). Although the level of party influence fluctuated over time (Aldrich 1995; Bartels 2000), parties currently matter a great deal in American politics (Fiorina and Abrams 2008; Layman et al. 2006). To ensure their influence in politics, national and state parties have been quite adept at transforming the current political environment, particularly campaign finance regulations, in order to maintain a key role in campaigns and elections (Herrnson 1986; La Raja 2002; Skinner et al. 2013).

Despite a large literature on American political parties, there are still unanswered questions about their roles and activities. Do candidates rely on the party to be successful? How do political institutions and context impact the organization of parties? Additionally, we do not have a good understanding of how different levels of parties (e.g., state committees, legislative campaign committees, candidates) interact and how this cooperation may vary across states. Finally, we know little about candidate donations in state elections. Do most candidates behave like Texas Representative Martinez Fischer and work closely with party committees by sharing resources? If candidates do cooperate and contribute resources to other candidates and party committees, even in candidate-centered races, are they rewarded with legislative leadership positions like Congressional incumbents that redistribute large sums of money to other members and the party (Cann 2008; Currinder 2009; Heberlig and Larson 2012)?
My dissertation is an attempt to answer these questions, thereby providing a more complete perspective on party organizations in elections. By undertaking the first comparative research on state party networks, I expand our knowledge about party structure and how context impacts their structure. Additionally, by using a relational approach, I can identify influential actors in the party through their connections. This research helps expand our knowledge on the organization or strength of state parties.

To really understand the organization and operation of parties, we must also study the connections between electoral and legislative politics. Party operations in elections and the legislature are linked and reinforcing in the pursuit of party and candidate goals. By studying how the electoral organization and activities of party actors influences legislative leadership allocation, I develop a more complete understanding of political parties and candidates than research that separates these arenas or actors.

**Approaches to Studying American Political Parties**

**Overview.** Political parties have long been key subjects of interest in political science. In 1950, the American Political Science Association called for stronger parties in American politics in the report, “Toward a More Responsible Two-Party System”.\(^1\) Most likely independently of the report, American political parties started professionalizing and strengthening their organizations in the 1980s (Aldrich 1995; La Raja 2003, 2008). Although state parties were a little slower to institutionalize than national parties, most states had active party organizations by the late 1990s (Abbe and Herrnson 2003; Lynch

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\(^1\) This report has since generated more than 20 published responses. While the role of the report in the professionalization and institutionalization of American parties is questionable, the report definitely helped develop the study of political parties into an active and healthy subfield of political science research.
and Rozell 2002; Morehouse and Jewell 2003; La Raja 2003). As party organizations have changed and adapted over the past half-century (M. D. Brewer and Stonecash 2009; Harmel and Janda 1994; Rae 2007; La Raja 2008), the definitions of parties proposed by scholars have understandably changed. Schwartz (1990) argues that the definitions used by scholars imply particular theories of parties, which also impacts the approaches used to study them. Thus, the study of parties has developed and changed along with these changes in party organizations. As parties have become more “responsible” parties (i.e., more ideologically coherent) and play a larger role in American politics, the approach to studying them has advanced from voting behavior studies to studying parties as institutions with a coalition of actors that solve key collective action problems in elections and governance. In this section, I outline the progression of approaches to studying political parties while identifying issues in the previous research and remaining questions.

**Early Approaches.** Before the 1950s, studies of parties were more holistic in approach, but tended to be more normative examinations of parties and democratic governance (Reiter 2006). At the time of the APSA report, parties were loose and temporary organizations that rarely structured electoral or legislative politics (APSA 1950). State parties actually helped financially support the national parties in the 1950s and 1960s (Heard 1960; La Raja 2003). Understandably, broad empirical research on political party organizations was difficult until the behavioral revolution.

Soon before the APSA report on parties, Key (1942) proposed his definition of parties as tripartite organizations (parties-in-the-electorate, parties-as-organizations,
parties-in-governance). Key was perhaps ahead of his time in that he viewed parties as diverse coalitions that engaged in a variety of activities (Aldrich 1995; Key 1942). Until recently, many scholars adopted Key’s conception of parties as an umbrella organization split into three segments (Aldrich 1995; Pomper 1992; Reiter 2006). However, using Key’s tripartite definition has led many scholars to mistakenly separate party activities regardless of their research question (Noel 2010). In addition to not linking party activities, Key’s definition does not conceptually link party actors (Pomper 1992), making it difficult to study party organizations in multiple political arenas.

As behavioral research became the main approach in political science, research on party systems and organizations declined. Instead, through the 1980s, most scholars focused on parties-in-the-electorate by studying the influence of parties in elections through studies of voting behavior\(^2\) or surveys (for example: Converse and Pierce 1985; LeBlanc 1969; Nie et al. 1979; Norpoth 1976; Stanley et al. 1986; Stokes and Miller 1962). However, these studies center on attitudes or behavior, not the party as an organization or institution, limiting their ability to fully conceptualize and measure American political parties.

**Parties as Formal Organizations.** Motivated by research studying the decline of American parties (Broder 1972; Crotty and Jacobson 1980; R. Scott and Hrebenar 1979), a research team containing John F. Bibby, Cornelius C. Cotter, James L. Gibson, and Robert J. Huckshorn started empirically measuring the strength of parties through organizational and bureaucratic factors. These scholars were able to demonstrate that parties were

\(^2\) This includes both studies of mass voting behavior in elections and research on party unity in legislative voting.
actually becoming stronger and more structured during this period of “decline” (Cotter and Bibby 1980; Cotter et al. 1989; Gibson et al. 1983, 1985). During the 1960s and 1970s, the national party committees furthered their institutionalization by hiring permanent staff and establishing their own autonomy separate from presidential candidates (Cotter and Bibby 1980). National parties also increased their fundraising and provision of campaign services, regaining some of their relevance to candidates in a period of candidate-centered campaigns (Aldrich 1995; Cotter and Bibby 1980; Herrnson 1988).

In the behavior era of party research, scholars often completely ignored state and local parties, especially their organization. “Prior to the inception of this study in the late 1970s the condition of American party organizations at the state and local levels had not been addressed systematically for some decades” (Cotter et al. 1989, xi). Gibson et al. (1983) and Cotter et al. (1989) conduct a survey of state party chairs and directors to create a score of the structural strength of parties. They generate their party organizational strength score through a factor analysis of 12 indictors of organizational strength, including budget size, the number of staff and leadership professionalism. Through this research, they find that like national parties, state and local parties were professionalizing and becoming stronger institutions throughout the 1980s. Additionally, there is a high level of integration across levels of parties. National, state, and local parties cooperate and share resources (Cotter et al. 1989; Huckshorn et al. 1986).

Other scholars continue to use Cotter et al.’s Party Transformation Study survey in order to study party organizational changes across time (Appleton and Ward 1995; Coleman 1996; La Raja 2003, 2008). La Raja (2003, 2008) examines how political
parties used soft money to build their national and state organizations. Through large transfers of soft money, the national parties helped state parties become more active and stronger organizations (La Raja 2003). Despite the advancements of Cotter, his colleagues, and other party organizational scholars, this type of research is not appropriate for studying current parties because it focuses only on formal party organizations and omits many important actors (such as candidates) in party organizations (Herrnson 2009).

Parties and Ambitious Politicians. Contrary to earlier research on the decline of parties (Broder 1972; Crotty and Jacobson 1980; R. Scott and Hrebenar 1979), parties clearly were major organizers in American politics by the 1990s. Partisan voting in elections and party coherence in the legislature increased throughout the late 1980s and early 1990s (Rae 2007). Although this was perhaps partly due to the stronger and more established organizations, parties also transitioned into integrated institutions that support the interests of ambitious politicians in elections and the legislature (Aldrich 1995). Aldrich (1995) proposes several problems of democratic governance: (1) organizing the selection and operation of elections, (2) mobilizing the electorate, and (3) organizing majorities in office to achieve the party’s collective goals. By developing into organizations structured to advance the interests of its ambitious politicians (i.e., a service-oriented party), modern parties are now institutions that help solve these three collective action problems to democratic governance.

Other scholars agree that parties now influence and organize governance and policymaking (Smith 2007). Through the provision of incentives like leadership
positions, seats on key committees and electoral support, political parties can ensure party
loyalty and the cooperation of their legislative officeholders (Aldrich 1995; Cox and
McCubbins 1993, 2005; Heberlig and Larson 2012; Smith 2007). Thus, these incentives
help parties overcome the collective-action problems involved with governing and
guarantee that parties structure and influence policymaking (Aldrich 1995).

Parties as Multilayered Coalitions. These theories of parties as institutional solutions to
democratic governance mainly focus on leaders and officeholders. However, other party
actors contribute to operation of these service-oriented parties, particularly in elections.
Building on these parties as institutions theories, some scholars conceptualize and
measure parties as a coalition of actors cooperating to achieve related goals (Bawn et al.
2012; Desmarais et al. 2014; Grossmann and Dominguez 2009; Herrnson 2009;
Schlesinger 1984, 1994; Schwartz 1990). The multilayered coalition of actors that
comprise parties include groups that ally with the party and party loyalists, in addition to
the formal party committees and members holding elected office. These actors rationally
work together to support the party’s candidates in an effort to attain their own goals,
which connect to the partisan goal of controlling government (Herrnson 2009;

Not only do different formal party committees (national, state, local parties) and
candidates cooperate under the party umbrella, the party coalition includes closely
aligned groups (Grossmann and Dominguez 2009; Herrnson 2009; Koger et al. 2009;
Skinner et al. 2012). These allied groups cooperate in elections and help the party achieve
its goals (Skinner et al. 2012). Scholars refer to these interest groups as party allies and
they are part of the ‘party coalition’ (Herrnson 2009) and ‘extended party network’ (Desmarais et al. 2014; Koger et al. 2009). Research that focuses on only the formal organizations of parties misses the contribution and activities of these party allies.

To best understand the organization and operation of parties, we need to study the connections among party actors (Herrnson 2009; Schwartz 1990; Skinner et al. 2012). Otherwise, it is difficult to determine which actors are part of the party coalition. As interest groups become more important actors in party organizations (Skinner et al. 2012), it is increasingly important to study the broader party coalitions.

Additionally, by studying the party actors’ relationships, we can identify influential actors. Scholars frequently use party actors’ activities or status (e.g., fundraising, legislative leaders, committee chairs) to measure their influence. However, these types of measures are limited in their explanatory power because they are specific to the electoral or legislative arena. This makes it difficult to study how the influence translates across electoral and legislative politics. By using the relationships to determine influence, we can examine how actors’ influence in the party impacts their career and links across electoral and legislative politics.

Research approaches like econometric analysis (e.g., regression) are inappropriate for this project because they require an assumption of independence. This assumption of independence makes it difficult to analyze the impact of actors’ relationships on their influence. By placing the emphasis on relationships of actors, social network analysis (SNA), a relational framework, allows us to examine the source of influence (i.e., relationships with other actors) and how the influence of actors connects across electoral
and legislative politics. Therefore, the most appropriate method for this research is social network analysis.

SNA is more than a methodology to apply when testing hypotheses; it is a frame of reference for understanding interactions among actors and the context within which these interactions occur (McClurg and Young 2011; Ward et al. 2011). Scholars are increasingly using social network analysis to study political parties (Desmarais et al. 2014; Grossmann and Dominguez 2009; Herrnson and Kirkland 2013; Koger et al. 2009, 2010; Schwartz 1990; Skinner et al. 2012, 2013). By using social network analysis, scholars can identify and incorporate party allies in studies of political parties (Noel 2010). Research using social network analysis has made great strides in regards to our knowledge of party organizations (Koger et al. 2009, 2010; Schwartz 1990; Skinner et al. 2012), but this research is rarely comparative and infrequently integrates social network theories.

**Summary.** The multiple layers of actors cooperate and contribute to the party coalition in an effort to achieve their goals, which may include policy or personal power. Electoral successes are key to a party’s ability to achieve these goals. Thus, supporting the party’s candidates with resources is an important activity for parties in all levels of elections (national, state, and local). However, party actors have scarce resources, so actors must use rational strategies for allocating resources services and funding to candidates. Understanding how party actors, including candidates, distribute resources is important for appreciating the full role and activities of parties in elections. Therefore, before
discussing my research questions, I summarize previous research and unanswered questions about the allocation strategies of party organizations.

**Party Allocation Strategies and Candidate Giving**

In recent years, political parties (both national and state parties) have managed to retain or recover relevance lost in the transition to candidate-centered campaigns through various adaptations, particularly by increasing their provision of campaign services to candidates (Damore and Hansford 1999; Francia, Herrnson, Frendreis, et al. 2003; Herrnson 2010; La Raja 2008; Schecter and Hedge 2001). Both national parties and their congressional campaign committees started providing campaign services in the mid-1980s (Herrnson 2010). These campaign services include fundraising support, polling, campaign management, voter registration, direct mailers, and advertising. By providing supplies in bulk or through in-house operations, parties minimize the costs of campaigns for individual candidates. With the growing importance of money to candidates at all levels (Powell 2012), party resources and support have become increasingly important to candidates (Bibby 2002; Herrnson 1986; G. C. Jacobson 1985).

Even though parties have been quite successful at raising money post-Bipartisan Campaign Reform Act (BCRA) (2002) (Corrado 2006; Dwyre and Kolodny 2006), political parties do not have unlimited resources. They must make difficult and strategic decisions when allocating money or other resources to candidates and party committees (Brunell 2005; Gierzynski 1992). Parties’ allocation strategies are important to study because they provide key insights into the structure and strength of party organizations.
Party Allocation of Resources. A common perception is that political parties allocate their contributions in an attempt to increase party loyalty and unity in voting (Cox and McCubbins 1993; Sinclair 1986). However, more recent and comparative research finds that parties do not contribute to their candidates to reward or induce party loyalty (Damore and Hansford 1999; Schecter and Hedge 2001). Instead, parties contribute money and other resources with the main goal of maximizing their seats (Brunell 2005; Damore and Hansford 1999; Herrnson 1986; G. C. Jacobson 1985; Schecter and Hedge 2001).

In general, parties direct campaign services to the races in which they will have the greatest impact (Hogan 2002). One strategy is to fund competitive candidates in “marginal seats”, in an effort to maintain or gain a majority within the chamber (Currinder 2003; Stonecash and Keith 1996; Stonecash 1988). Additionally, parties tend to adopt contribution strategies that respond to the political context. Parties often use a defensive or offensive contributing strategy depending on whether the party is in the majority or minority within the chamber and/or the legislature (Gierzynski 1992; Glasgow 2002; Herrnson 1986; G. C. Jacobson and Kernell 1983; Schecter and Hedge 2001). Parties utilizing an offensive strategy will direct their contributions to competitive challengers and candidates in open seats in an effort to become the majority. When in the majority, though, parties will likely adopt a defensive strategy of protecting incumbents.

Most previous studies of party allocation strategies focus on the national or state formal party committees. Few explore the contributions of other party actors, including candidates and allied interest groups, in combination with the donations of formal party
committees. To understand party allocations, we must study more than just the donations of formal party committees.

**Candidate Contributions.** In order to raise enough money for campaigns, national parties now depend more on candidate contributions (Cann 2008; Currinder 2009; Heberlig and Larson 2012; Kanthak 2007). By advancing or assisting candidates in their individual goals, including winning election and policy goals, parties heighten cooperation and coordination in their electoral and legislative pursuits (Aldrich 1995; Herrnson 2009; Schlesinger 1984, 1994). However, maintaining a high level of party coordination in campaigns requires candidates to participate and contribute resources to the party. This historically has been difficult, especially for incumbents focused on winning reelection (Currinder 2009; Heberlig and Larson 2005; Heberlig 2003; G. C. Jacobson 1985; Kolodny and Dwyre 1998).

In Congressional politics, parties have been most successful in incentivizing the cooperation of incumbents through their control of legislative leadership positions. To stay a leader or to obtain a leadership position, legislative candidates must fundraise extensively and redistribute money to party committees and fellow candidates (Cann 2008; Currinder 2009; Heberlig and Larson 2012). Therefore, legislative institutions are increasingly resource-based (Currinder 2009; Heberlig and Larson 2012), which raises questions about the role of parties in legislative organization.

Like parties, candidates have limited resources. Thus, members and candidates must also make strategic decisions regarding the allocation of their donations. In their study of Congressional member-to-member giving, Heberlig and Larson (2012) posit that
members adopt party-centered strategies or individualist contribution strategies. When operating with party-centered strategies, members give contributions to candidates or party committees with the goal of advancing the party’s interest (i.e., majority status). Party-centered strategies involve targeting substantial resources to candidates in competitive races, which is key to winning a majority. Individualistic campaign strategies, on the other hand, involve giving contributions on the basis of personal relationships or self-interest. In their research, Heberlig and Larson (2012) find a shift to party-oriented contribution strategies by members of Congress. Motivated by this research on member allocation strategies, I explore whether party actors’ contribution strategies in state elections also follow party-oriented strategies or whether individualistic campaign strategies are more common.

The studies that do acknowledge the role candidates and leaders play as donors in elections focus on the money flow between officeholders/candidates and ignore other party activities (Cann 2008; Clucas 1992; Currinder 2009; Heberlig and Larson 2010; Kanthak 2007). The research questions of these studies tend to concentrate on the impact of leader and candidate contributions within the legislature, particularly on the effect of candidate contributions on the ability of officeholders to get leadership positions (Cann 2008; Kanthak 2007; Schecter and Hedge 2001) and on votes (Clucas 1992). These studies do not link to research exploring other party activities in elections.

Leaders, officeholders, and candidates are part of the political party coalition working together with other party allies to achieve their mutual goals (Desmarais et al. 2014; Herrnson 2009; Schlesinger 1994; Skinner et al. 2012), so member and candidate contributions should not be ignored or separated from other party donations. In some
states, leaving out the donation activity of candidates dramatically reduces the amount of party money going to candidates; thereby, reducing the influence of parties in elections. For example, in the 2008 election, legislative leaders and candidates contributed a combined $14.8 million to other candidates and party committees. Clearly these actors are important contributors, especially since the parties donated about $14 million in the 2008 Pennsylvania legislative election (Kettler and Hamm 2011). Leaders and candidates are important actors in the party organization, making it essential to include their campaign activity in studies of party activities.

Despite numerous studies of member-to-member giving in Congress, we know little about the contributing behavior of state candidates. Texas state representative Trey Martinez Fischer’s fundraising efforts on behalf of the Texas Democratic Party demonstrate that state candidates do contribute to and fundraise for state parties, as does the Pennsylvania example. However, we do not know whether the proportion of candidates reallocating resources to other candidates and party committees varies across state elections or how important candidate donations are to state party organizations.

**Research Questions**

There is much we still do not know about political parties in U.S. politics, particularly at the subnational level. This is partly due to some issues with the previous research, particularly the separation of electoral and legislative party actors and activities. Additionally, the narrow focus on some studies makes addressing questions about state party coalitions difficult.
In my dissertation, I explore several research questions that help address these unanswered questions or problems with previous literature. First, do party organizations still differ across states? The work of Cotter, his colleagues, and La Raja find substantive differences in the organization and activity-level of state and local parties. However, they focus only on formal party organizations. By incorporating the rest of the party coalition in my research (e.g., leaders, candidates, party allies), I seek to provide an updated look at the comparative organizational strength of political parties at the state level.

Relatedly, do political institutions and the electoral context influence the structure of party organizations? In the past, increased competition has motivated parties to institutionalize and become more active (Hamm and Harmel 1993; C. S. Rosenthal 1995; J. R. Stanley 1992). If there is still variance in party organizations across states, do states with higher levels of competition have larger and more cooperative party organizations?

Finally, at the party-level, who are the key actors in state parties? Do state party committees continue to be the central actor in state party coalitions? Do most candidates cooperate with the party and contribute to other candidates and party committees? There is little previous research on candidate contributions in state elections, so we do not know how involved they are in the party coalition. By conducting a comparative analysis of state parties, I can actually explore these questions.

In addition to party-level analysis, I also address several actor-level questions. First, what allocation strategies are present in state elections? Previous research on allocation strategies usually only includes party committees or officeholders. By including candidates and party allies in the party organization, I can better explore the allocation strategies of the party comparatively across states.
The activities of modern parties in elections and the government are linked and reinforcing in the pursuit of shared goals. Most previous research on party activities exclusively studies elections or the legislature (Pomper 1992; Smith 2007). To really understand the organization and operation of parties, we must also study the connections between electoral and legislative politics (Aldrich 1995). In an effort to better understand these connections, I examine how the party electoral organization impacts the legislative career of candidates. Does influence in party organizations translate to power outside elections? Can we predict future leaders by their role in a party’s electoral activities? For example, are influential candidates in party organizations more likely to become leaders in the legislature? Additionally, I explore how variance in the structure of party organizations impacts the role and influence of candidates in elections and the legislature.

**Dissertation Organization**

In the following chapter (Chapter 2), I discuss my selection of social network analysis to study state political parties. Recently, more scholars are using social network analysis to study political parties (Desmarais et al. 2014; Grossmann and Dominguez 2009; Herrnson and Kirkland 2013; Koger et al. 2009, 2010; Masket 2011; Schwartz 1990; Skinner et al. 2012, 2013). While these studies are advancing our understanding of parties, researchers rarely incorporate or draw upon network theories. There are well-developed network theories in sociology and other fields that may help scholars better understand party networks and social networks in general. In Chapter 2, I draw upon Ronald S. Burt’s (1992, 2005) structural holes theory to propose hypotheses regarding the structure of party networks in state elections. A network theory of social capital,
structural holes theory concentrates on the existence or lack of connections between groups within networks. With this theory, I can compare the network structure of parties across states to better understand their organization and how they vary (or do not vary), something missing from current party research. Additionally, I propose several actor-level hypotheses involving party allocation strategies and the affect of network structure on party actors in Chapter 2.

I describe my research design and data in Chapter 3. The chapter includes a comprehensive discussion of social network analysis, including the development of the framework and methodology. Then, I examine existing definitions of political parties and explain the definition I adopt in this study. After discussing the measurement of party organizations, I detail my case selection and data collection process. Finally, I outline the methods I use to study and compare political party networks.

The next three chapters empirically examine state political party networks. Chapter 4 includes a case study of Texas parties, which serves as a pilot study for the comparative chapters. In this chapter, I evaluate the appropriateness and usefulness of using structural holes theory to examine political parties. Although my study of Texas parties provides some important insights into party networks and their impact on candidates, the lack of comparative data makes it difficult to thoroughly test my expectations about the structure of party organizations.

Chapters 5 and 6 contain comparative analysis of political parties for the seven states included in my sample. Due to the lack of knowledge about donors in state elections, particularly candidate donors, I begin this chapter with an examination of the role of activity of different contributor types in state donor pools. Few studies of party
networks thoroughly discuss the process used to measure and create networks. In an effort to better understand decisions regarding network measurement, I assess different criteria for creating a network. I use this analysis to ensure the most appropriate network configurations in my analysis. Finally, in Chapter 5, I compare the structure of party networks across states to better understand how political factors may influence party organizations. This analysis includes the identification and comparison of structural holes in state party networks.

Few studies of party networks evaluate how the structure of the organization impacts the behavior and success of party actors. While the analysis in Chapter 5 is at the network-level, the research in Chapter 6 is at the actor-level. In Chapter 6, I explore whether party actors pursue individualistic or party-oriented contribution strategies. Although party-oriented strategies (e.g., contributing to competitive races) are more common in Congressional races, it is possible that individualistic allocation strategies (e.g., donating to friends) will be more frequent in the less-professional state races. I also examine whether influence in electoral party networks translates into power in legislatures. Are influential actors in party networks more likely to become legislative leaders? This analysis allows me to explore the linkage between electoral party networks and legislative politics.

In the concluding chapter (Chapter 7), I discuss how my results speak to our existing theories and knowledge of political parties. After describing the contributions from this research, I present my plan for expanding this research in the future.
Chapter 2: Structural Holes Theory and Political Parties

Introduction

Political parties (both national and state parties) have increasingly important roles in recent U.S. elections (M. Jewell and Morehouse 2001). Parties have managed to retain or recover their relevance in elections through several different methods of adaption, particularly through the provision of campaign services (Bibby 2002; Francia, Herrnson, Frendreis, et al. 2003; Herrnson 2002) and shifting the types of organizations used for campaign funding (Skinner, Masket, and Dulio 2012, 2013). However, studies assessing the electoral activities of parties and party actors rarely capture the full impact of their behavior, because research often ignores the influence of relationships on behavior (M. D. Ward, Stovel, and Sacks 2011). In order to avoid a misrepresentation of the research context, I use social network analysis, a relational framework, to study political party organization and their strategies.

In this chapter, I first discuss the importance of studying the electoral behavior of political parties, the major issues associated with the current research path on parties, and how adopting social network analysis helps alleviate a frequent misconception of the research context. Then, I describe social network analysis and its application in political science research, especially the study of political parties. After outlining the need for more theoretical work when using social network analysis, I discuss structural holes theory and my application of the theory to the study of political party networks. Finally, I explain in more depth the homophily principle and my use of the principle and structural
holes theory to study clusters\(^3\) within and across political parties in campaigns. My hypotheses draw from both political science research and social network theories. I introduce these hypotheses throughout the discussion of structural holes theory and potential network groups.

**Political Parties in Elections: Assessing the Literature\(^4\)**

The assumption of a candidate-centered campaign at least partly persists because of theoretical and research problems in the literature. In addition to the issues discussed in the introductory chapter, particularly the separation of party activities in elections and legislatures in most research, there are major theoretical limitations of the previous research agendas in studying political parties. Before examining these limitations, however, we need to discuss the importance of political parties and money in U.S. politics.

Money is a crucial resource for candidates and political parties in elections. While the direct relationship between campaign spending and votes is complicated and still debated (Ansolabehere and Gerber 1994; Bonneau and Cann 2011; G. C. Jacobson 1978, 1980; Stratmann 2006b), scholars agree that few non-incumbent candidates with serious opposition win elections without significant campaign funds (Currinder 2009; Gierzynski and Breaux 1991; Green and Krasno 1988). Candidates need campaign donations to both fund their campaigns and scare off potential challengers (Currinder 2009). Without

\(^3\) I refer to these clusters within and across party networks in elections as potential network groups.

\(^4\) Please refer to Chapter 1 for a lengthy discussion of previous research on political parties in U.S. politics.
money to finance their efforts to inform voters of their candidacy, many candidates in low-information state elections may go unknown to voters (Gierzynski and Breaux 1991).

The amount of money in congressional and state elections has dramatically increased over the past several decades. From the 2006 to the 2010 election, the amount Congressional candidates’ campaigns collected increased from $1.5 billion to $1.9 billion (Center for Responsive Politics 2011). In the 2008 election, state legislative candidates raised more than $1.2 billion – a 9% increase from the 2006 election cycle (National Institute on Money in State Politics 2010).  

Raising large amounts of money for campaigns requires dedicating extensive amounts of time to fundraising for personal campaigns and party committees. In her excellent study on campaign contributions in legislative elections, Powell (2012) finds that 46% of state legislators now spend as much time, or more, fundraising for the legislative caucus campaign committee as they do for their own campaign. Additionally, the mounting demand for campaign funds is placing growing pressure on legislative leaders to fundraise, which has increased the professionalization of legislative leadership in many states (Powell 2012). Powell finds as various factors (e.g., member ambition, chamber size, member compensation) increase the value of holding office, thereby increasing the value of fundraising, members spend more time fundraising and raise more money. This growing importance of money triggers members to add more weight to the

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5 The amount of money raised in other state elections has also considerably increased. For example, state Supreme Court candidates in 26 states raised over $45 million in contributions in the 2007-08 electoral cycle – a 50% increase from the 1997-98 election (Sample et al. 2010).
interests of their donors throughout the legislative session.\textsuperscript{6} This is true for personal campaign efforts or fundraising for the legislative caucus.

Powell’s conclusions make studying campaign contributions and party networks significant because the more time candidates, leaders, and party committees spend on fundraising, the more influence contributions have in the legislature and potentially on policy (Powell 2012). Additionally, top fundraisers sponsor and pass more bills than other legislators, heightening the opportunity of members to support the interests of donors (Vonnahme 2012). These findings further demonstrate the importance of understanding the electoral role of parties.

Despite some concern that recent electoral laws are incapacitating political parties (La Raja 2008), scholars increasingly view political parties as institutional solutions to collective action problems that arise during elections and in governance, such as differences in individual goals (Aldrich 1995; Heberlig and Larson 2012). By advancing or assisting candidates in their individual goals, including power or policy goals, parties can heighten cooperation and coordination in their electoral and legislative pursuits (Aldrich 1995; Schlesinger 1984) – maximizing their fundraising. Parties help candidates achieve their goals by rewarding large fundraisers with leadership positions, resulting in legislative institutions and organization being increasingly resource-based (Cann 2008; Currinder 2009; Heberlig and Larson 2012).

This growing and changing role of parties in elections makes it important for scholars and observers to understand modern party organizations. However, there are some major theoretical issues in the study of political parties that make it difficult to

\textsuperscript{6} This may be a conscious or subconscious decision (see: Gordon 2005; Lessig 2011).
accurately measure and understand party involvement in elections. In this chapter, I discuss two theoretical limitations often present in political party research: misconceptions of the research context and the lack of network theories in party network studies. I also propose some solutions to help further our knowledge of party organizations and their impact on state politics.

Limitations of Previous Research: Misconceptions of the Research Context. A major concern with previous research on political parties, and perhaps much of political science research, is the tendency to focus too narrowly on a subset of a sample. This narrow focus results in research that often misses the larger story and presents a misconception of relationships. We can use a metaphor from biology to better understand this issue. It is as though we are trying to explain the organization and behavior of cells without recognizing that cells comprise a living organism. Making this mistake could lead scientists to make inaccurate assumptions or conclusions about cells. Although this may usually be more of a conceptual issue rather than a substantive issue, it has important implications for political party research.

Much of the current political party research has a ground-level view of parties. The research focuses on particular segments of political parties, such as formal party committees (Gibson et al. 1983; Huckshorn et al. 1986) or leaders (Heberlig and Larson 2010; Kanthak 2007). Studies of political parties rarely connect the various party actors and different party electoral activities. By separating party actors and activities, we restrict our ability to incorporate the overarching organization or context in our analysis.
This narrowed focus also makes it difficult to study how connections among party actors structure behavior and outcomes. Political parties are organizations of actors contributing to the party in an effort to win elections (Schlesinger 1994; Schwartz 1990). The relationships and cooperation among actors has important consequences for party success (Schlesinger 1994). Additionally, “the power of members is dependent upon the powers of other members given the relationship between them” (Dowding 1995, 153). This suggests that the relationships of candidates, party committees, and other party actors may influence or constrict their behavior and success in elections and the legislature (Hafner-Burton, Kahler, and Montgomery 2009; M. D. Ward, Stovel, and Sacks 2011). Although united by common goals, party actors also have individual goals (Herrnson 2009; Schlesinger 1994). Their ability to achieve these goals, like leadership positions, is constrained (or heightened) by their relationship and position within the party network.

Thus, to really understand how parties operate and are organized, we need to recognize that the structure of the broader party organization impacts party actors. This makes a relational approach important. Other approaches restrict the research context, placing more focus on individual actors or committees, diminishing our ability to examine the impact of relationships among party actors on actions and (party-level and individual-level) results.

In order to do this, we need a relational framework that does not reduce our analysis to the individual. Relational analysis permits scholars to study multiple levels of relationships, organizational and individual, while also accounting for the broader social structure and context around relationships. By adopting a relational framework, I can
avoid assuming the behavior of actors is independent of their connections with other actors by allowing us to model this dependence. In the next section, I describe this decision and my framework further.

Social Network Analysis

Previous studies assessing the electoral activities of political parties often underestimate or misinterpret their behavior, because the research does not account for the influence of relationships on behavior (M. D. Ward, Stovel, and Sacks 2011). “The value of a relationship is not defined inside the relationship; it is defined by the social context around the relationship” (Burt 2005, 11). This suggests that the organization of political party networks may impact the campaign activities of party actors, making it important to adopt a relational framework and methodology with which to study relationships within the party and the context around these relationships (Burt 2005).

Many statistical approaches, such as regression analysis, are not appropriate for studying relationships because they focus on individual behavior. Social network analysis (SNA) is the most appropriate framework for this project because it provides a path for studying the interactions among actors and the context within which these connections occur (McClurg and Young 2011; M. D. Ward, Stovel, and Sacks 2011). A social network is a set of relationships or transactions, also referred to as ties, that connect and

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7 Throughout this section and the rest of this study, I use the terms social network analysis, network analysis, and SNA interchangeably.

8 Party actors include: state political party committees, legislative campaign committees, local party organizations, leadership committees, and candidates (Herrnson and Kirkland 2013; Herrnson 2009).
influence the behavior of actors (Kadushin 2012). In a network framework, relations among actors are measured as linkages between agents, permitting researchers to study organizational structure and avoid a misconception of the research context (Scott 2000).

Thus, unlike most frameworks used in political science research, social network analysis places the emphasis on relationships (Kadushin 2012). Consequently, when using this approach, the behavior of actors is not independent. Instead, while actors shape the network, the network also structures and constrains the actions of actors within the network (Hafner-Burton, Kahler, and Montgomery 2009; M. D. Ward, Stovel, and Sacks 2011). This two-way influence makes the use of social network analysis advantageous. Through social network analysis, we can adopt a relational context that helps us better avoid reducing the focus of analysis to individuals without also accounting for the broader social structure – providing a more accurate view of the world we are studying. The flexibility in SNA to study multiple levels of analysis (e.g., system, organization, individual) also helps ensure scholars incorporate a more complete research context and conduct a more encompassing study.

Development of Social Network Analysis. The development of social network analysis can be attributed to three research communities: 1930s psychologists, influenced by Wolfgang Köhler’s gestalt theory, studying group dynamics and information flow through groups; Harvard sociologists and anthropologists in the 1930s studying relationships and cliques; and anthropologists at Manchester University studying tribal community relations (Scott 2000). The Manchester scholars conceptualized social

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9 Throughout the rest of the chapters, I use relationships, connections, and ties interchangeably to describe the connections among network actors.
structures as “networks of relations” (Scott 2000, pg. 27). This helped develop SNA into a method of study by adding sociological concepts to the formal methods of network analysis. However, these mostly independent research groups did not come together to fully develop social network analysis until Harvard researchers in the 1960s and 1970s started modeling social structures. Stanley Milgram’s small world experiments at Harvard, which established that there are six steps or connections between any two people, were especially key in motivating network science (Kadushin 2012; Milgram 1967).

Although the work of Milgram, Harrison White and the other Harvard scholars was not theoretically linked, their adoption of network analysis as a method to study and model relations unified them (Scott 2000). These Harvard researchers adopted the framework for studying diverse topics, including corporate interlocks, which moved SNA beyond a focus on interpersonal relations. Soon, scholars at other institutions began to utilize a network framework and methodology, resulting in the creation of the International Network for Social Network Analysis (INSNA). Under the leadership of two former White students, the INSNA worked to further develop and expand the studying of relationships and networks (Scott 2000).

While the mathematical advances of social network analysis since the 1960s is quite impressive, the theoretical development is less striking. Some scholars have argued that SNA is the basis for several major frameworks of sociological theory, including rational choice theories (Lin 1982) and exchange theories (Cook 1977; Emerson 1976). Scott (2000) approaches social network analysis as a theoretical orientation towards social structures not as a particular social theory or a specific theoretical framework.
However, instead of developing network theory, most scholars adopting this framework tend to integrate increasingly sophisticated SNA methods with existing social science theories.

Researchers often represent social networks graphically, which is important for the framework both as a theory and as a method. Although scholars use graphical network tools to display their data, they also increasingly use relational data to calculate various measures to analyze the data in statistical analyses (Kadushin 2012). With current technology, it is possible to utilize the convenient mathematical properties of networks while also studying and displaying them graphically.

In the 1980s and 1990s, scholars across various fields of research became more interested in the use of statistical models for analyzing relational data. Among other methods and measures, exponential random graph models (ERGMs) were developed. ERGM models are now some of the most advanced and common statistical analyses used with network data (Prell 2012). ERGM models allow researchers to test the significance of real network properties by comparing these properties to those in random graphs. Advances in methodology and statistical models are permitting scholars to better test theoretical expectations regarding networks. Unlike the early development of SNA, political scientists are contributing to these advances (M. D. Ward, Stovel, and Sacks 2011).

While this overview of the development of social network analysis helps provide important background information on the framework, discussing its use in political
science helps provides a better understanding of the current issues and limitations in the analysis of political networks.¹⁰

Social Network Analysis and Political Science. While social network analysis has been a common approach in other social sciences, particularly sociology, the method is still somewhat novel in most political science subfields. Initial attempts to study political phenomena using a network approach did not always result in quality research. Scholars studying policy-making were early adopters of the framework. However, these scholars tended to use networks as a metaphor for their research rather than fully adopting the SNA approach developing in sociology and other social sciences. Dowding (1995) criticizes the descriptive, metaphoric approach of these scholars, including Heclo (1978). While the author admits there is nothing wrong with the methodology of this approach, he argues it fails to produce “fundamental theories of the policy process” (Dowding 1995, 137). In order for political scientists to develop theories using network properties¹¹, Dowding suggests political science needs to use the algebraic methods of the sociological network approach. By quantifying networks, political scientists could better understand network structures and how these structures relate to political phenomena.

Political scientists did begin to move beyond using networks as a metaphor and started incorporating the methodologies and theories of SNA developed in sociology. By using social network analysis to study the influence of private interests on federal policy,

¹⁰ The preceding introduction to social network analysis focuses on its development. For an introduction to the terms and methodology of social network analysis, please see Chapter 3.
¹¹ In the early 1990s, most political scientists adopting a network metaphor were analyzing properties of actors rather than using relational data (Dowding 1995).
The Hollow Core (1993) helped motivate other scholars to adopt the approach (Heinz et al. 1993). Through collaboration between political scientists and sociologists, Heinz et al. more fully utilized relational data in the study of political phenomena than previous political science studies.

Many of the other, early political science researchers using social network analysis as more than a metaphor conducted surveys to study political parties and behavior. In an early use of SNA, Schwartz (1990) conducted a survey of Republican Party actors in Illinois. With these responses, she measured the party network through contact links. Schwartz uses several measures of the party network structure to study power within the party and the development of particular relationships. SNA has also been useful in the study of political behavior. Studies of political behavior drew from social capital theories and social network analysis to study how personal relationships influence information flows and political participation (La Due Lake and Huckfeldt 1998; Knoke 1990; McClurg 2003). This stream of research continues to be a strong research area with scholars using experiments to study relationships and voter turnout (Bond et al. 2012; Nickerson 2008).

Although political scientists began to use increasingly sophisticated network methodology in their research, many political networks studies continued to be descriptive. While important in many ways, these descriptive studies often suffered from an inability to move forward the research program. One subfield less prone to this issue is the international relations subfield.

International relations scholars are using social network analysis to test existing political science theories and testing network theories using their data (Hafner-Burton,
Kahler, and Montgomery 2009). Driven by structural theories of power and relations, these scholars are able to move the subfield forward with a relational approach and core network concepts. In particular, scholars are using SNA to refine important concepts and to study the impact of international network structures on important topics like alliance development (Cranmer, Desmarais, and Menninga 2012; Maoz et al. 2007) and conflict (Maoz 2006; Maoz et al. 2006). These scholars have adopted a better approach than other political science subfields where networks are often used as a metaphor or lack a strong theoretical component.

Despite its relative newness and theoretical concerns, “network analysis is currently a vibrant area of political science” (M. D. Ward, Stovel, and Sacks 2011, 259). Political scientists are now using SNA to study a variety of political phenomenon, including: the flow of political information (Huckfeldt and Sprague 1987, 1995), voter turnout (Nickerson 2008), and bill co-sponsorship/voting in legislatures (Fowler 2006a, 2006b; Kirkland 2011; Porter et al. 2005). Additionally, relational data is being used to advance the research of social movements and collective action (Goss and Heaney 2010; Heaney and Rojas 2008). Political scientists are also using social network analysis in remarkable ways to study policies and the impact of policies. For example, scholars at Wayne State University explored how the implementation of term limits in the Michigan Legislature affected whom legislators relied on for information on bill proposals (Sarbaugh-Thompson et al. 2006). Using social network analysis, Sarbaugh-Thompson et al. (2006) determined that caucus leaders become more influential within chambers and that information networks on policy proposals changed after term limits.
However, notwithstanding these examples above, social network analysis is still sparingly used in political science. SNA is often applicable, and perhaps a better approach, for studying many of the relationships and organizations of interest to political scientists. Yet, the majority of political scientists avoid adopting a relational framework in their work, even when the approach is applicable. Whether this is due to methodological challenges or theoretical concerns, there are definitely many overlooked opportunities for political scientists to use SNA to advance our understanding of political phenomena.

Social Network Analysis and Political Party Research. Research on political parties is another political science subfield that has taken advantage of social network analysis (Noel 2010). It is increasingly common in political party research to study the organization of parties as networks of actors working together to achieve electoral and legislative goals (Herrnson 2009; Koger, Masket, and Noel 2010; Monroe 2001; Schwartz 1990; Skinner, Masket, and Dulio 2012). Conceptualizing political parties as networks is not a particularly new approach (Schlesinger 1994; Schwartz 1990), but innovations in SNA and public transparency have allowed scholars to really integrate this approach into their research (Herrnson and Kirkland 2013; Koger, Masket, and Noel 2010; Skinner, Masket, and Dulio 2012).

Scholars often view parties as teams of actors seeking to win elections (Pomper 1992; Schwartz 1990).\textsuperscript{12} United by some shared goals (winning office), actors cooperate and contribute to the party coalition in an effort to achieve individual goals as well

\textsuperscript{12} Please see Chapter 3 for an extensive discussion of the definition and conceptualization of political parties.
(power, policy). Thus, party organizations consist of connections and interactions among many actors, including formal party committees, candidates, and interest groups (Herrnson 2009; Schlesinger 1994). Network analysis allows scholars to formally characterize these relationships, which is not feasible with other frameworks that assume independence among units. Unlike other models, relational analysis uses interactions or relationships to examine organizational structure (Wasserman and Faust 1994). This provides a method for measuring and comparing more complete party networks. Additionally, SNA allows scholars to study party actors within their relationships and institutional context (Kadushin 2012). Measuring the structural constraints on actors through their connections allows scholars to better understand the distribution of power and influence.

Scholars also argue that it is important to study political parties as networks in order to identify allied actors, like interest groups, that work closely with formal party committees to achieve shared goals (Koger, Masket, and Noel 2010; Skinner, Masket, and Dulio 2012). SNA permits researchers to measure the party organization without removing these informal party actors (Noel 2010). This is significant because BCRA’s (2002) ban on soft money increased the relevancy of party allies, like 527 committees, by forcing party committees to find new fundraising sources. Therefore, party adaptations to BCRA has heightened the importance of including these informal party actors in the party network (Skinner, Masket, and Dulio 2012). The ability to study the broader party, not just formal party committees, is a major contribution of party network research.

Thus, scholars using a relational framework are able to study political party organization and behavior with a new approach to established research questions and
propose new research avenues. For example, scholars studying campaign endorsements are now exploring the role of the party network in determining presidential nominations (Cohen et al. 2009). Scholars are also using social network analysis to examine the level of partisan polarization present in U.S. politics (Moody and Mucha 2013; Waugh et al. 2009). For example, Moody and Mucha (2013) demonstrate that partisan voting and polarization in the U.S. Senate has been incredibly high for the last decade.

Additionally, researchers are using network data to study the presence of factions within party organizations (Grossmann and Dominguez 2009; Koger, Masket, and Noel 2010). Through this analysis, scholars can determine whether ideological factions divide parties. For example, in their research on national parties, Koger et al. (2010) find that three significant clusters split the Republican Party (Bush-Cheney campaign, an evangelical faction, and a more business-oriented cluster), but the Democratic network show minimal factionalization.

In the party network literature, scholars often study resource and information transactions to better understand party organization and activities. For example, Koger et al. (2009) study the cooperation between the party and interest groups in sharing donor and mailing lists. They find that allied actors frequently share information on mailing lists with the formal party committees, which demonstrates the importance of studying the broader organization when researching party activities in elections. Many scholars use campaign finance transactions to measure and study party networks (Grossmann and Dominguez 2009; Herrnson and Kirkland 2013; Skinner, Masket, and Dulio 2012). With this approach, researchers identify key actors in parties (Herrnson and Kirkland 2013; Skinner, Masket, and Dulio 2012), explore party adaptions to campaign finance
restrictions (Skinner, Masket, and Dulio 2012), and study cooperation with party allies (Grossmann and Dominguez 2009). These scholars are moving forward research on the organization and behavior of parties in elections by addressing established research questions with a more suitable framework.

Beyond formal committees (Cotter et al. 1989; La Raja 2008), few studies compare the organization of state political parties. Apart from several papers studying party networks in California (Masket 2009, 2011), we also know little about the structure of state political party networks. Identifying variation in state party networks is important for understanding the role of parties in state politics.

Limitations of Previous Research: Neglect of Social Network Theories. A serious limitation of the previous research on political parties is the absence of a strong theoretical component derived from network theory. Political party research using network science (i.e., the mathematics of networks) has made great strides in the study of party organizations (e.g., Koger et al. 2009, 2010). However, this research often overlooks the relevance of network theories for their work. For example, in Skinner et al.’s (2012, 2013) interesting work on 527 committees and parties, the authors use social network analysis as their method of analysis but do not draw upon any SNA theories. Instead of testing hypotheses derived from a general theory, they develop empirical expectations from the party and campaign finance literature. Although this research provides insights into party organization motivated by a theory of party adaption (Harmel and Janda 1994), their analysis is somewhat lacking in its ability to address more general political phenomena due to the narrowness of the research question. In addition to testing
research questions regarding parties, drawing upon network theory helps expand our understanding of political organizations and networks through more flexible and general expectations.\(^{13}\)

Strong research programs require both “theory construction and theory probing that generates and then answers new questions” (Lowery and Gray 2010). If scholars do not utilize and incorporate network theory, then we limit our development and exploration of new research questions. Lowery and Gray (2010) propose that strong and progressive research programs avoid broad, abstract paradigms and context-less analyses. Instead, we need mid-range theories tested comparatively that incorporate varying contexts (Lowery and Gray 2010). Social network theories provide a path for political party scholars to move their research agenda forward by better incorporating context, developing new research questions that involve political party and more general network topics, and testing existing political science findings. The next section outlines the network theory adopted in this study.

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\(^{13}\)Although studies of party networks draw predominately from political science theories, scholars studying other aspects of politics often incorporate network theories. For example, studies of political behavior use social network theories of social capital to better explore and explain behavior (e.g., La Due Lake and Huckfeldt 1998; Kirkland 2011). These scholars find that actors’ relationships impact the likelihood of political participation (La Due Lake and Huckfeldt 1998) and legislative success (Kirkland 2011), which builds on previous findings in political science partly by incorporating the broader context of social and political connections. However, both studies are also able to test more general hypotheses through the use of network theories. Despite the success of studies like these, most current research on parties does not utilize social network theories, which are well developed in sociology and psychology.
Structural Holes Theory

In an attempt to better integrate the study of networks and parties, I use Burt’s structural holes theory to study and compare party organizations (1992, 2005). This theory concentrates on the existence (or the lack) of structural holes in networks, which are the lack of connections among clusters within the network. In most social structures, actors sharing various characteristics tend to flock together, creating clusters of actors within networks (Kadushin 2012; McPherson, Smith-Lovin, and Cook 2001). For example, elementary school children tend to form close friendships with other children sharing their gender and race (Shrum, Cheek, Jr., and Hunter 1988). Scholars refer to this tendency to interact and bond with others like them as the homophily principle (Marsden 1988; McPherson et al. 2001). Clustering occurs in most social networks (Burt 2005; McPherson et al. 2001), making it likely that party actors also cluster within the broader party coalition. For this study, Burt’s (1992, 2000, 2005) structural holes theory (SHT) is more appropriate than other network theories due to its focus on actors bridging clusters (or the lack of actors bridging clusters) and the assumption that tie formation is strategic.\(^{14}\)

Clustering can impact the efficiency of the network (Burt 2005, 15). If actors connect clusters through their relationships (i.e., bridging a structural hole), they act as brokers between sub-networks and ensure the flow of novel information and resources throughout the network. The performance of networks without brokers is impaired because the flow of information is stunted (Burt 2000). In addition to helping the

\(^{14}\) I also considered drawing upon exchange theories (Emerson and Cook 1978; Emerson 1976) and Granovetter’s strength of weak ties theory (1973). However, as I discuss in a later section, Burt’s theory is more suitable for this study due to his assumption that ties are strategic in nature.
organization, serving as a broker provides actors with more advantageous positions. Through its focus on network structure and clustering, structural holes theory provides a path for both studying how the structure of networks heightens the advantage of particular actors and impacts network efficacy.

Therefore, I use structural holes theory (Burt 1992, 2000, 2005) to investigate how this clustering impacts the party network and the success of candidates. The ability of a party to efficiently and effectively distribute resources to the candidates in most need of campaign support (i.e., those in competitive races) is important for the electoral success of the party (Damore and Hansford 1999; Snyder 1989). In this study, I am interested in whether clustering exists within party networks and how it may impact the success of a political party and its actors. In the following section, I describe structural holes theory, its assumptions, and its application to the study of political parties and campaigns.

**Description of Structural Holes Theory.** Structural holes theory is one prominent network theory of social capital. Social capital is a complex concept, but many sociologists define it as “resources made available through social relations” (Kadushin 2012, 165). Thus, theories often treat networks as social capital on the basis that “social networks have values” (Putnam 2013). Social capital operates at multiple levels, including individual actor networks and social systems (Kadushin 2012). Networks are an important aspect of social capital because it is through these relationships that actors have access to resources and other desired social elements, such as trust. Within (and across) each level, there is systemic investment in and creation of social capital through activities and interactions
among actors. There is also more individualized access to these resources, which increases the well-being or status of an individual within the network (Burt 2005; Kadushin 2012; Lin and Erickson 2008). This makes network theories of social capital appropriate for studying party networks, because they help illuminate how social capital, at both the network and individual level, impacts party success in the future.

For networks to be efficient and successful, individuals require quality information to help make valuable decisions and efficiently allocate resources. However, in most social structures, networks organize into multiple, dense clusters with a few actors connecting the clusters. These clusters tend to be homophilous (McPherson et al. 2001; Moody 2001). In other words, individuals in these groups tend to share some similar traits. When this clustering occurs within a network, information spreads more within groups than across them (Burt 2005). While individuals in separate groups may know one another, these “clusters are islands of opinion and information” (Burt 2005, 15), suggesting that actors rarely pay attention to the activities of other clusters. This can diminish network performance or cooperation due to the redundant information or resources circulating within these groups. Burt refers to the weak connections or gaps between these clusters as structural holes.15

One might think that structural holes would harm a network since they could act as buffers and separate individuals. However, when actors bridge structural holes and connect clusters, networks can actually be more efficient due to the bringing together of diverse information and resources from people in different clusters (Burt 2000). “A bridging tie is a tie that links a person to people who are not connected to their other

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15 Most scholars studying social capital and networks have adopted Burt’s structural holes terminology.
friends” (Borgatti and Lopez-Kidwell 2011, 41). Scholars refer to actors connecting these clusters as brokers. Networks with more brokers bridging structural holes have a higher level of transference of novel ideas or resources, increasing effectiveness or success (Burt 1992).

Burt’s structural holes theory and Granovetter’s (1973) strength of weak ties theory (SWT) share an underlying model of social networks. A major difference between the two theories is Burt’s focus on the redundancy of ties, not the strength of ties like Granovetter. However, both address the mechanism increasing efficiency in networks with structural holes (Borgatti and Lopez-Kidwell 2011). Actors tend to develop relationships with others like themselves (homophily), ensuring strong ties within clusters and heightening the redundancy of information because actors share the same friends (Granovetter 1973). Weak ties (i.e., fewer shared connections) often connect clusters or gaps in the network because they connect otherwise unconnected actors (Borgatti and Lopez-Kidwell 2011; Granovetter 1973). Thus, bridging structural holes increases network effectiveness by ensuring novel information flows across clusters (Burt 1992). The transfer of nonredundant information in networks is important for developing new ideas, better allocating resources, and increasing cooperation (Borgatti and Lopez-Kidwell 2011; Burt 1992; Chwe 2000; Granovetter 1973).

In addition to impacting the success of the network as a whole, structural holes can positively affect individual actors within the network. Brokers, the actors connecting clusters, have a competitive advantage compared to other actors due to their better access to information and resources through their more numerous (and less redundant) connections. Therefore, it is more likely that brokers will be given new opportunities
when they arise, like promotions (Burt 1992, 2000). Brokers also often have a “…disproportionate say in whose interests are served…” (Burt 2000, 354), providing them with even more influence. Additionally, brokers in networks with more structural holes encounter more rewarding opportunities because there are more clusters to interact with and connect (Burt 2005). Identifying brokers provides a method for scholars to identify which actors hold positions of influence within the network, which is important to understanding the role and success of individual actors.

In his later work, Burt notes that bridging structural holes alone does not ensure strong performance for a network (Burt 2000, 2005). Instead, there needs to be an interaction between brokerage and closure.¹⁶ Networks need both actors connecting groups within the network (i.e., brokers bridging structural holes) and closure (i.e., high connectivity among actors) within each group or cluster in the larger network. Network closure within groups is important because these dense connections build social capital within groups. Additionally, closure can help identify the value in the network’s structural holes (Burt 2000).¹⁷ While this is a relatively minor component of structural holes theory, it is important to keep in mind in research drawing upon Burt’s work.

**Theoretical Assumptions.** Adopting the social network framework and structural holes theory involves several assumptions. First, we must assume that organizations and other structures (whether economic, political, or social) are enduring patterns of linkages and relations (Wasserman and Faust 1994). Thus, a key principle of SNA is the importance of

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¹⁶ Closure measures the completeness of a network through the connectivity of actors (Burt 2005). Network closure is high when everyone in a network is connected.  
¹⁷ For more information on identifying structural holes, please see Chapter 3.
relationships (Wasserman and Faust 1994). This imposes a focus on the interdependence of actors and their behavior. The assumption of independence, common in most political science research, is not possible (or desirable) in social network analysis. Additionally, we must accept that networks “…affect perceptions, beliefs, and actions through a variety of structural mechanisms that are socially constructed by relations among entities (Knoke and Yang 2008, 5). The constraints or opportunities provided by the network structure impact both behavior and outcomes (Wasserman and Faust 1994). Although these are assumptions, they are supported by extensive research on social networks across many areas of study (Knoke and Yang 2008).

Most theories of social networks, including structural holes theory, view network connections or ties as “roads or pipes that enable (and constrain) some kind of flow between nodes” (Borgatti and Halgin 2011, 3). Flows are whatever is exchanged during the actors’ interaction or transaction – including ideas or resources (Borgatti and Halgin 2011). For example, friends may discuss (the connection) and share information on current events (flow). The assumption that networks permit the flow of resources or information is important for studying political parties. By using campaign finance transactions to measure political party networks (see Chapter 3), I measure party ties by a transaction (campaign donation) that involves a flow of resources between actors. Due to the strategic nature of donations (R. S. Jones and Borris 1985; Potters, Sloof, and van Winden 1997; Stratmann 2005), this is a good approach for measuring connections among party actors.

Structural holes theory also involves assumptions regarding the formation of ties. In his theory of weak ties, Granovetter (1973) views ties as serendipitous. Ties are useful,
but not formed for an explicit purpose. In exchange theories (Emerson and Cook 1978; Emerson 1976), trust and commitment enables cooperation and fosters relationships and ties. Burt (1992), on the other hand, assumes ties are strategic in nature and formed with an instrumental approach (Borgatti and Halgin 2011). This assumption makes structural holes theory more appropriate for studying party networks since party actors try to allocate their resources in a rational fashion (Heberlig and Larson 2012; G. C. Jacobson and Kernell 1982; R. S. Jones and Borris 1985; Stonecash 1988).

**Previous Applications of Structural Holes Theory.** The most common usage of structural holes theory is to examine how information flows impact firm production and organization (for example: Ahuja 2000; Burt 2004). Studies have explored the impact of structural holes on performance in Italian television production (Zaheer and Soda 2009), Canadian mutual fund companies (Zaheer and Bell 2005), and UK investment firms (Shipilov and Li 2008). Additionally, scholars have used SHT to study how employees at an Italian branch of a multinational computer manufacturer adapted to changing organizational requirements (Gargiulo and Benassi 2000).

Although most commonly applied to firms, structural holes theory has also been used to research social relations. Scholars have applied the theory to study how personality shapes networks (Burt, Jannotta, and Mahoney 1998; Kalish and Robins 2006) and the transfer of information among social networks (Burt 1999; Roch 2005). Opinion leaders, which are important in political networks, are often brokers facilitating the transfer of information between social groups. These opinion brokers are not usually leaders within groups, but they are important for spreading information across groups.
The study of policy networks has started to incorporate structural holes theory (Christopoulos 2006; Sandström and Carlsson 2008). In their research on university policymaking networks, Sandström and Carlsson (2008) find that brokers bridging structural holes are important for mobilizing resources needed to solve policy problems. Outside of these studies on policy networks, few political scientists have yet to incorporate structural holes theory into their research.\textsuperscript{18}

Structural holes theory is fairly similar to research many political scientists are already doing, particularly the legislative co-sponsorship research (Dietrich 2011; Tam Cho and Dietrich n.d.; Tam Cho and Fowler 2010). For example, Dietrich (2011) finds that the cohesiveness of minorities in Congress harms their chances of advancing their agenda. Dietrich does not use SHT to study co-sponsorship behavior of Congressional minorities, but it would have been appropriate and provided an avenue for examining the brokers connecting clusters within Congress. However, scholars have used Granovetter’s theory of weak ties to better understand interest group cooperation (Carpenter, Esterling, and Lazer 2003), relationships and legislative success in Congress (Kirkland 2011; Tam Cho and Fowler 2010), and the role of caucuses in policymaking (Ringe, Victor, and Carman 2013). The similarity of Granovetter’s and Burt’s theories make it surprising that more political scientists have not utilized structural holes theory in their research.

\textsuperscript{18} Although some political scientists use measurements and concepts from structural holes theory (e.g., Christopoulos 2006; Kirkland 2011), few use the theory to develop research questions and expectations.
Advantages of Structural Holes Theory. As mentioned previously, scholars often use SHT to study how information flows impact firm production. In research on parties, scholars frequently research the allocation of campaign resources in elections (Heberlig and Larson 2012; Stonecash 1988). This focus on allocation strategies makes SHT an appropriate theory for studying party networks.

Party scholars also frequently examine the path to leadership for legislators and candidates (Cann 2008; Currinder 2003; Heberlig and Larson 2012). Leadership positions are very desirable, particularly for the control over legislative operations and the fundraising advantage. Structural holes theory includes a focus on influential actors in networks (e.g., brokers). These actors are important for network productiveness and are advantaged by their positions in the network. By studying brokers, we can identify influential actors in party networks and explore how the structure of party networks impacts the path to leadership.

SNA and SHT also provide a theory and methodology for studying the organization of political parties beyond formal committees. By using this approach, I can study the effectiveness of party network structures while including party allies and other informal actors in the analysis. These party allies can be difficult to identify without examining the connections among actors in campaign networks. Social network analysis provides a method for including these actors without making a priori decisions regarding which actors are party allies. Using structural holes analysis also provides a path for studying the impact and effectiveness of party organizations. This is important for understanding the role of parties in elections.
Unlike other social network theories (e.g., Granovetter’s theory of weak ties), structural holes theory assumes ties are strategic. Like other party research drawing on rational choice theory, I assume that party actors transfer their resources to candidates/committees with an express purpose to achieve a goal. While this goal may vary from helping the party (e.g., competitive races, quality candidates) to helping achieve power (e.g., powerful candidates), party actors allocate these precious resources in a rational manner. Therefore, ties among party actors are strategic unlike ties in some networks. With SHT, I can incorporate expectations motivated by rational choice theory without conflicts.

Expectations: Structural Holes and Political Parties. Burt (2005) asserts that most networks have structural holes with some individuals bridging the groups or clusters. However, the extent to which structural holes exist varies across organizations and institutional contexts, which impacts the efficiency and success of networks (Burt 1992, 2005). I expect that the political context, particularly the influence of money in elections, will impact the presence of structural holes in state parties.

As legislative seats become more valuable, campaigns become more expensive and candidates dedicate more time to fundraising rather than legislating (Francia and Herrnson 2003; Powell 2012). Consequently, legislators place more pressure on party committees and legislative leaders to fundraise, making an effective party organization necessary (Currinder 2009; Powell 2012). Using Powell’s measure of the influence of money within legislative chambers and structural holes theory, I explore whether parties have more efficient networks (i.e., more structural holes) in states where the influence of
money is higher. I expect that as the influence of campaign contributions increases in a legislature, meaning the time spent fundraising and the amount raised is also increasing, the party will need to increase its efficiency. Redundant contacts decreases network efficiency because it limits the distribution of diverse information and resources (Burt 1992). Increasing nonredundant contacts (e.g., connecting unconnected contacts) helps maximize network efficiency by maximizing the presence of structural holes (Burt 1992, 2005). In this situation, ties between party actors may become more strategic, resulting in a party network with more structural holes in order to decrease redundancy and increase efficiency (Burt 1992, 2000, 2005). As the level of the influence of campaign contributions increase, party networks are likely to have more structural holes (Hypothesis 1).

To understand cooperation among party actors, we need to know whether party-oriented or individualist contribution strategies dominate in elections. In their research on allocation strategies, Heberlig and Larson (2012) explore the identity of congressional candidates receiving contributions from other members. When adopting party-centered strategies, contributions are directed to competitive candidates or party committees in an effort to help the party win seats. Individualist campaign strategies involve giving contributions on the basis of personal relationships or self-interest (e.g., winning reelection, winning leadership positions). In their research, Heberlig and Larson find a shift to party-oriented campaign allocation strategies by members of Congress.

In structural holes theory, brokers play an important role in the operations of networks. These actors that hold influential positions in the party due to their connections within the network. Thus, in party networks, brokers are those actors receiving or giving
numerous donations to other party actors. By identifying brokers bridging structural holes in the party network, I can examine contribution strategies. If brokers tend to be competitive candidates or party committees, then party actors are allocating resources in an attempt to help the party in elections. If party actors use an individualist campaign strategy when distributing resources, then we should not find any particular pattern in the identity of brokers (beyond the leaders). I expect to find party-oriented allocation strategies are the dominant strategy in state parties with more competitive elections because individual actors have an incentive to contribute to the party in these states (Herrnson 2009). *Party-oriented allocation strategies are likely to be the dominant campaign strategy in states with competitive elections (Hypothesis 2).*

Scholars are increasingly studying party network organization, but we still know little about how the social organization may impact the party and party actors. Structural holes theory provides a great opportunity to study the role of brokers within parties and their identity. We know leaders are more active fundraisers than other legislators and candidates (Cann 2008; Heberlig and Larson 2012). Additionally, Powell (2012) finds that many legislators expect leaders to be strong fundraisers for the caucus. Due to these fundraising expectations, leaders are likely to be connected to many other candidates and party committees through their donations, resulting in them being brokers in the party network. Additionally, formal party committees are central actors in party networks (Herrnson and Kirkland 2013; Koger, Masket, and Noel 2010). Therefore, I also expect party committees to be brokers. *In party networks, brokers connecting clusters are more likely to be formal party committees or legislative leaders (Hypothesis 3).*
By using Burt’s structural holes theory, I can also explore how the social structure of the party impacts the success and career of candidates. This provides a path for examining leadership emergence in state political parties. Leadership positions are desirable due to the increased fundraising power and control over resource allocation (Richman 2010; A. Rosenthal 2008). Candidates active in redistributing funds often become leaders (P. R. Brewer and Deering 2005; Cann 2008; Currinder 2003, 2009). However, whom an actor is connected to may matter more than the amount contributed for becoming a leader. Through SNA and SHT, I can measure the individual role of actors within the network. In networks, position determines influence (Brass 1984; Kanter 1977), which allows us to study whether prominence in a network predicts emergence as a leader. If an actor has a position of influence within the party network (i.e., is a broker), then they will be more likely to win leadership positions due to their connections. Brokers in the party network are more likely to become leaders than non-brokers (Hypothesis 4).

Additionally, I use structural holes theory to more deeply explore clusters and how the larger party networks impacts the actors in these less-central clusters. If clusters of female candidates exist in state legislative campaign networks without brokers connecting them to the rest of the campaign network, they may be less likely to be successful in elections and the legislature than other candidates. This expectation draws upon the homophily principle and clustering within networks. In the next section, I describe homophily and my research on clusters in party networks, which I refer to as potential network groups.
Homophily in Networks

Political scientists rarely explore clustering within political parties and campaign networks. Party scholars have used social network analysis to explore factions operating within parties (Grossmann and Dominguez 2009; Koger, Masket, and Noel 2010), but the research usually stops with the identification of factions. Using SNA to develop research questions regarding clusters in parties is a good approach for better understanding ties among actors in elections and measuring influence of actors.

Like early political science research on voting behavior (Lazarsfeld, Berelson, and Gaudet 1968), early social network analysis used a socio-metric approach to explore how individuals in networks split into smaller groups or clusters (Scott 2000). Ultimately, sociologists concluded that homophily (e.g., homogeneity) in connections explained clustering, also known as the birds of a feather principle (Blau 1977; McPherson, Smith-Lovin, and Cook 2001). People similar to one another are much more likely to interact than those who differ from one another. This strong, positive relationship between actors sharing characteristics was an early and replicated finding in research on social structures (Freeman 1996; McPherson et al. 2001). In research on friendship in the 1950s (Lazarsfeld and Merton 1955), scholars used the term homophily to describe the regularity of friendships developing between people sharing particular characteristics. McPherson et al. (2001) argue that homophily is an underlying principle of organization.

Although homophily in friendships and marriage are the most common examples of the principle, it exists in many other types of networks. Researchers have found homophily in relationships across many different types of relationships, including workplace relationships (Ibarra 1992, 1995; Kalleberg et al. 1996) and political
discussion networks (Huckfeldt and Sprague 1995; Marsden 1987). Additionally, the dimensions of homophily that are present in networks is diverse. Clustering by race and gender is very common in personal, work, and other networks (Brass 1985; Ibarra 1992; Kalleberg et al. 1996; Marsden 1987; McDonald, Lin, and Ao 2009). Relationships are also often homogenous by age, socioeconomic status, and religion (McPherson, Smith-Lovin, and Cook 2001).

Social network analysis and structural holes theory provide a path for analyzing clusters that may exist within party organizations. Homophily occurs in most social networks (McPherson et al. 2001), making it likely that party actors also cluster together by some shared characteristic (e.g., gender, race, ideology). Although political parties are the main organizing entity in campaigns (La Raja 2008), it is likely that candidates and organizations separate into other less formal groups within the campaign network. If clusters do appear within (or perhaps across) party networks, it is likely they are homogenous in terms of some characteristic (McPherson et al. 1992; McPherson et al. 2001). Party scholars do find evidence that ideological factions exist within congressional party networks (Grossmann and Dominguez 2009; Koger et al. 2010). However, scholars have yet to study the existence and identity of clusters in party organizations.

Through structural holes theory, I can identify clusters and explore how they impact the party and party actors. As discussed above, these clusters may organize around different characteristics, such as gender, ideology, or race, because individuals tend to interact with others like themselves (the homophily principle). I refer to these subgroups or clusters as potential network groups, because these are network groups that may organize within or across parties in elections or within legislative chambers. By
studying potential network groups, I can provide a more nuanced understanding of state party organizations that explores how relationships impact electoral and legislative outcomes for party actors.

**Limitations of Social Network Analysis and Structural Holes Theory**

Despite the many advantages of using the social network framework and structural holes theory to study political party networks, there are some theoretical and methodological limitations and concerns. In this section, I outline several of these limitations and how I address them.

Perhaps the biggest theoretical limitation of this approach is the issue of determining causality. Although political scientists find an empirically strong association between political behavior and networks, testing the causality of these relationships is difficult due to interdependence and endogeneity of networks (Fowler et al. 2011). Attention from scholars on methodological solutions to this issue, as well as advancements in statistical programs, is helping mitigate issues in making causal inferences with political network data (Fowler et al. 2011). For example, scholars recently developed an algorithm to find meaningful and statistically significant communities in networks (Zhang and Moore 2014) and a method for testing hypotheses across networks (Moreno and Neville 2013). Determining the directionality of relationships is also difficult with network data. For example, it is often difficult to determine whether network structure, or individual characteristics correlating with structural holes, is driving performance (Buskens 2002). In an attempt to alleviate some causality and directionality concerns, I compare state parties networks across elections
and states. While this approach does not solve all causality concerns, it does provide some insight on how the structure of parties impact outcomes in the legislature.

There are other methodological concerns with using structural holes theory to study political parties. Identifying key network components, including clusters and structural holes, is challenging, especially since their existence is subjective to the form of measurement used by researchers. By using Burt’s (1992, 2005) measurements to identify structural holes and using several different methods to evaluate clustering, I should avoid these issues. However, it is important for me to be clear in the analysis and discussion of clusters or structural holes present in state party networks. Additionally, I compare how different measurements change the structure of networks in an effort to select the most consistent and accurate approach across states.

Analyzing the relationships proposed in this chapter is challenging even with social network data. Relational data assumes and models dependency in relationships. While this makes social network analysis a useful framework for studying relationships, it makes many common statistical models inappropriate since they assume independence among units. This requires me to be careful in the type of analysis used to evaluate the data. Much of my statistical analysis draws upon difference-of-means tests and analyzing distributions in a comparative approach. However, I also conduct some more standard analyses by including network measurements for individual actors as independent variables that try to account for the dependency present in relational data. I discuss this issue further in the research design chapter.
Summary

Beyond the existence and activities of formal party committees (Cotter et al. 1989; Gibson et al. 1983; Huckshorn et al. 1986), we know little about the organization of state political parties. My research uses social network analysis and structural holes theory to study the electoral organization of political parties. With this framework, I avoid issues in previous research by studying the full party organization and incorporate network theory to better understand these political entities. I also study how state political contexts and institutions affect party network organizations. This research provides a more comprehensive comparative analysis of state party networks than previously undertaken.

Through structural holes theory, I also analyze clusters within party networks. By analyzing communities within the party, we can better understand their organizational structure. Studying clustering also allows me to identify key party actors. An advantage of this approach is that I can examine how candidates’ electoral activities and relationships impact their career, including the attainment of leadership positions in the legislature. This is an important contribution since few studies incorporate aspects from both electoral and legislative arenas.
Chapter 3: Research Design

Introduction

In this chapter, I outline the research design and data used in the following empirical chapters. To best understand the analysis presented in the subsequent chapters, one needs at least a basic understanding of social network analysis (SNA). In addition to providing an overview of SNA, I discuss the definition of political parties adopted in this study and the measurement of party organizations and potential network groups. I also summarize my case selection and data collection. Finally, I describe the analysis used to study and compare political party networks.

Social Network Analysis

As discussed in the theoretical chapter, social network analysis, a relational framework, is the most appropriate methodology for studying the structure of political parties and how that structure impacts the success of both the overall party coalition and candidates. The relational framework and methodologies of social network analysis provides the ability to study how relationships among party actors structure and constrain behavior (Scott 2000; Ward, Stovel, and Sacks 2011). Network analysis is also useful for identifying influential actors within networks and exploring how an individual’s location within a network may impact their behavior and success (Fowler et al. 2011).

Studying parties as social networks also provides scholars with a method to dynamically compare parties across institutions, particularly states. Evaluating parties across institutions is usually difficult because of comparability concerns, but the social network framework provides a reliable method. Social network analysis also allows
scholars to study the influence of social networks on the behavior of political actors (Fowler et al. 2011). In the party literature, this means scholars can study how the party network affects the behavior of party actors in elections and government, such as cooperation between the party and interest groups in sharing mailing lists (Koger, Masket, and Noel 2009). However, social network analysis also provides a great opportunity to study how these potential network groups impact the behavior of political actors and their success in achieving electoral and legislative goals, while simultaneously accounting for their membership in larger networks (e.g., political parties).

In addition to being a framework motivating many theories, social network analysis is also a methodology. An in-depth discussion of the social network analysis framework is included in the theoretical chapter. In this chapter, I focus on the methodology and common terms.

Social networks contain nodes (i.e., actors) connected by ties (i.e., relationships). Examples of nodes include individuals, organizations, and nations. The relational ties that link actors can be informal (e.g., relationships with people at other schools) or formal, such as organizations funding other organizations (Hawe, Webster, and Shiell 2004). Ties connecting actors can vary in several important ways. Connections may be undirected or directed. Undirected ties represent symmetric relationships (e.g., marriage). Directed ties represent relationships that can be asymmetric, such as friendships or campaign donations. Ties can also be dichotomous or valued. Dichotomous ties are links between nodes that either exist or they do not. For example, two nations are either at war or they are not. However, valued ties vary in their strength. For instance, we may have one friend
in common or three. The value of our ties will vary according to how many friends we have in common.

Another important basic network concept is mode. A mode is a class of nodes in a network. Two-mode networks, also known as bipartite networks, involve connections between two different types of nodes. For example, the links between for-profit corporations and non-profit organizations or ties between actors and films in which they were a member of the cast (Hawe, Webster, and Shiell 2004; Newman 2010).

Network analysis requires relational data, which is often in the form of dyadic relationships. Researchers then organize these dyads or relationships into matrices (or edge lists if the dataset is large). Incidence matrices are binary and capture whether a relationship is present or not between all actors within the network. Adjacency matrices also represent the presence or absence of a connection, but these matrices can also measure the strength of relationships through valued ties (Scott 2000). Through graph theory, researchers can use these matrices to create a sociogram, which is a graph representing ties between actors. These graphs illustrate the structure of relationships or ties within a group (Scott 2000). In these graphs, it is the pattern of connections or ties that are of importance to researchers. Scott emphasizes that there is not one correct way to draw a network graph as long as the connections among nodes are correctly captured.

The length of lines connecting actors in network graphs is often kept the same when possible, since the physical length of lines between nodes does not contain useful information. Instead, scholars use concepts like density, degree, and path lengths to describe and measure the pattern of connections among actors. These types of
measurements, particularly the ones of interest to this study, are discussed later in this chapter.

Although adjacency matrices are easy to understand and use, the storage of large relational data in adjacency matrices is often difficult due to the large amount of memory required. Therefore, I store my relational data as edge lists. Edge lists store relationship information in columns. The two columns relate to one another by an implied tie connecting the two actors included in each column (Longley 2012). A third column may contain information measuring the value of the tie or connection. Once brought into a statistical program, the edge list functions similarly to an adjacency matrix. After converting the edge list to a graph object, researchers can draw network graphs and calculate the usual network measures.

However, before explaining in more depth the network measures utilized in this project, it is important to discuss the relational data used to measure party networks. First, I outline the conceptual definition of political party that I adopt. Then, I discuss my proposed concept of potential network groups. After those sections, I explain how I measure party and campaign networks.

**Conceptual Definition of Political Party**

The definitions of concepts are important in scientific research. Poorly defined concepts can result in theoretical problems and misinformed data collection (Sartori 1970). Perhaps unfortunately for scholars, political party is a concept especially difficult to define. Scholars have long debated and disagreed as to what constitutes a political party. General definitions often consider political parties “a group organized to gain
control of government…” (Schlesinger 1985, 1153). However, four deficiencies are common in the more general and the most frequently used definitions: separation of party activities, assumption of only electoral goals, exclusion of important party actors, and a requirement of active participation. For my purposes, I will briefly discuss previous definitions of political parties grouped by their deficiency, even though some of these definitions have little else in common.

Many scholars using Key’s (1952) popular definition of parties as tripartite organizations commit the error of separating party activities regardless of the research question (Noel 2010). Some scholars are especially critical of the tripartite approach, because in addition to not linking party activities, it does not conceptually link the various actors of parties (Pomper 1992), which makes Key’s definition of party inappropriate for my work. Secondly, many definitions of parties inaccurately assume that parties are solely motivated by electoral goals, such as Downs (1957), Pomper (1992), and Schlesinger (1994, 1995). Leaders and candidates, along with other actors in parties, definitely have policy and power goals (Aldrich 1995; Cann 2008; Clucas 1992; Herrnson 2009), making these definitions also inadequate for my conceptual definition of political parties.

The third deficiency is the exclusion of important party actors. Scholars defining parties using an organizational or legal basis restrict the party to formal party committees (Gibson et al. 1983; Huckshorn et al. 1986; Merrill, Grofman, and Brunell 2008). The tripartite approach to parties permits a broader view, but still excludes allied interest groups from the party (Key Jr. 1942). I consider leaders, candidates, and party allies important party actors, making these definitions inappropriate for my research.
The final issue with frequently used definitions is that some require actors to be actively participating or communicating to be included in the party. This deficiency is most common in the political party network literature (Koger, Masket, and Noel 2010; Schwartz 1990; Skinner, Masket, and Dulio 2012), where this issue is less a conceptual decision and more an artifact of measurement. These studies emphasize the importance of party organization in party efforts to win elections and propose a conception of parties that include both formal and informal party actors that contribute to the party’s efforts to win various offices. However, actors only appear in the party network by communicating or interacting with other party actors. This is a less than ideal assumption since some party actors may not be active in an election (e.g., Senate candidates not up for election), but should still remain in the network.

Due to these deficiencies, I adopt Herrnson’s (2009) definition. Herrnson proposes a definition of parties as multilayered coalitions. These multilayered coalitions include groups that ally with the party and party loyalists, in addition to the formal party committees and members holding elected office. The core of the coalition is comprised of party leaders and the formal party organization (e.g., the Democratic National Committee (DNC), National Republican Congressional Committee (NRCC)). The next layer of party consists of officeholders, candidates, and their committees. The layer beyond officeholders and candidates includes party allies, which includes organization and individuals closely aligned with the party helping the party achieve electoral goals. The outermost layers of the coalition are party loyalists in the electorate. However, party loyalists are not included in party strategy and party loyalists are the targets of the party’s actions, rather than cooperating with the party to achieve the party’s goals (Herrnson
Similar to Schlesinger’s and Aldrich’s concepts, Herrnson notes that these different levels of party actors may hold slightly different goals, but all have the basic goals of controlling government, extending their influence, and passing preferred policies. These members of the coalition may provide different contributions and vary in their commitment, but Herrnson views them all as members of the party. Therefore, the party organization is a much broader network than simply the formal party institutions.

Herrnson’s multilayered coalition party concept is ideal for my research for several reasons. First, Herrnson’s definition allows for the inclusion of more party actors than just the formal party committees. Additionally, Herrnson’s concept views parties as rationally motivated actors with multiple goals (not only electoral goals), allowing me to integrate rational choice theory into the social network framework. Finally, the Herrnson multilayered coalition party concept does not assume actors must be active in order to be part of the party coalition. Thus, I adopt Herrnson’s concept of parties as multilayered coalitions.

Measurement of Party Networks

We can conceptualize relationships and connections among actors in different ways. Often, a relationship may be as simple as sharing an attribute, such as belonging to the same organization, or being in the same room. However, connections or ties may also be the flow or exchange of information or resources between actors (Kadushin 2012). Due to my interest in studying the structure of political parties and relationships within parties, measuring relationships as sharing party identification is inappropriate. Instead, it is better to consider relationships as the sharing of campaign resources among party
actors. Other party network studies also use this approach and measure ties as the flow of campaign donations (Grossmann and Dominguez 2009; Herrnson and Kirkland 2013). Therefore, when modeling the party as a network, I use transfers of resources (e.g., campaign donations) among party actors as ties connecting the party (Herrnson 2009; Wasserman and Faust 1994).

There are some limitations to using the transfer of campaign resources to measure connections between party actors and the party network. This measure does not account for the sharing of endorsements, time, information or advice, all of which may be important ties between party actors. However, the transfer of campaign resources is a strategic interaction involving valuable and limited assets (Brunell 2005; Gierzynski 1992; Heberlig and Larson 2012). Therefore, while the measure may incorporate only some types of interactions among party actors, it is a strong definer for relationships between party actors in the electoral arena.

Campaign financial transaction is a broad term used to refer to direct donations, in-kind contributions, and independent expenditures. Direct donations are monetary contributions given to a candidate, party committee, or other political group during a campaign. In-kind donations are non-monetary resources given to a candidate or party committee to aid in their campaign efforts. Campaign services (e.g., consulting, polling), media/advertising, campaign mailers, and office supplies are common forms of in-kind donations given to candidates and party committees. An independent expenditure is money spent expressly to support or oppose a candidate, such as producing and paying for a television advertisement. Independent expenditures are not subject to any
limitations, but must not be coordinated with the candidate or campaign. Direct donations and in-kind contributions, on the other hand, may have limitations depending on the state.

Donations are the most commonly used form of campaign support used in political science research to study campaign finance. Many studies include both direct and in-kind donations but fail to differentiate them due to a lack of reporting details in the data. For studies of state elections, many scholars use data from the National Institute on Money in State Politics\textsuperscript{19}, which does not distinguish between direct and in-kind donations. Disregarding in-kind donations and independent expenditures is an issue because it limits the amount and type of interaction between parties and candidates included in the analysis. In-kind donations require more coordination between the party and candidates than other forms of campaign assistance, making it important to include them when studying relationships among formal party committees and candidates. After the enactment of the Bipartisan Campaign Reform Act (2002) and the \textit{Citizens United vs. Federal Election Commission} (2010) decision, parties have increasingly shifted money into independent expenditures benefitting or attacking candidates (Hamm et al. 2014; Ornstein, Mann, and Malbin 2009), which also makes it important to include independent spending in studies of parties’ financial activities in elections.

Ideally, I would use the transfer of all three types of campaign support to measure relationships for the party network. However, the reporting styles and data availability issues make this difficult. Most resources report independent spending records separate from other donations. Additionally, independent expenditures are often spending against a candidate. When reported in this manner, it makes creating connections among actors

\textsuperscript{19} For example: Bonica 2014; Eom and Gross 2006; Powell 2012; Stratmann 2006a; Witko 2005
for network analysis difficult because the resources are to defeat a candidate instead of support one. Therefore, in all states, I measure party networks using direct and in-kind donations, even though the data may not distinguish between types of contributions.

To better understand the impact of the social context (including the broader network structure), it is important to take a comparative approach. Consequently, I use campaign finance transactions in state legislative races since it provides variation in party organizations across states (La Raja 2003). Although many party scholars now study parties as networks (Koger, Masket, and Noel 2010; Schwartz 1990; Skinner, Masket, and Dulio 2012), I will be the first to comparatively study the structure of state party networks.

To create the party networks within the broad campaign networks, I identify all party organizations (including state and local party committees) and candidates as affiliated with either the Democratic or Republican parties. For most of my analysis, I reduce the entire campaign network to a sub-network consisting of party actors. This removes individual and group donors that are not substantively part of the party organization. This sub-network still includes donors to formal party actors not affiliated with the party, which allows me to include the extended party network or party coalition.

Identification of Potential Network Groups. In the theoretical chapter, I discussed potential network groups, a concept I propose using to better understand the (more informal) organization of political parties. Identifying potential network groups is rather complicated. Visual analysis of network graphs permits some exploration of the existence

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20 I discuss this decision and examine its impact in Chapter 5.
and identity of potential network groups. However, some clusters are harder to determine. Therefore, I use a community blocking measure to identify clusters and explore the membership of these communities within the party networks.

There are several different options for detecting communities. Several community detection algorithms, such as edge-betweenness, use a hierarchical approach in removing edges to determine communities. This method is best for small networks, since the complexity of the calculations make it difficult to analyze large networks (>3,500 edges). Many of the party networks included in this study have over 4,000 edges. Therefore, I use Walktrap community detection, another hierarchical approach that measures connected subgraphs (e.g., clusters, communities) with random walks. By assuming random walks will remain inside communities, Walktrap runs short random walks to identify communities. Walktrap is efficient and more accurate than other community detection algorithms in detecting subgraphs in large networks (Pons and Latapy 2005).

These clusters may vary in the strength of their connections to the rest of the network. I measure relevant potential network groups’ connections to the larger party network with cohesiveness. If their network is more cohesive – they have more redundant contacts, meaning they interact less with the larger network. Unfortunately, identifying clusters and communities is difficult and computationally challenging. Additionally, analyzing the results requires extensive knowledge of state party actors. Therefore, in this dissertation, I only analyze potential network groups in Texas (Chapter 4).

**Measurement of Structural Holes and Brokerage**

Structural holes theory allows researchers to investigate how clustering into
groups within networks (like potential network groups) impacts network performance. Through its focus on network structure and clustering, structural holes theory provides a path for studying how the structure of party networks provides particular individuals with an advantage (or disadvantage) and impacts network efficacy. In order to test the structural holes theory, however, we must measure the presence and access to structural holes. As a brief reminder, structural holes are “…the separation between non-redundant contacts” (Burt 1992, 18). Burt’s working definition of structural holes is “when there is no effective indirect connection between people” (Burt 2005, 24).

Identifying structural holes in a network is challenging, because the presence of structural holes may depend on the point of view (Burt 2005). One approach to determining the existence of structural holes is graphical analysis of networks. For example, in the fictitious network graphed in Figure 1, we see gaps between these three relatively dense clusters. These gaps are structural holes in that connections have not generally formed between these clusters (Burt 2005). Node 1 bridges these structural holes, connecting the clusters, and ensuring the circulation of nonredundant information or resources across the clusters.
Figure 3.1: Structural Holes Example

With a small network, graphical identification of structural holes is feasible. However, with a large network, this approach is not ideal. Additionally, there are data reliability concerns with the graphical identification approach since different observers may interpret spaces in a network differently. Although several different statistical measures exist to identify structural holes in actors’ connections (e.g., efficiency, ego-betweenness), I use triad census to calculate the proportion of relationship triads with structural holes (i.e., one actor connecting two otherwise-unconnected actors). While not the most ideal measure, this is easy to calculate for large networks and provides an initial idea of the presence of structural holes in state party networks.

Burt also recommends studying structural holes by measuring access to structural
holes, which he consider synonymous with brokerage opportunities. To evaluate whether actors are brokers, I use Burt’s constraint score to measure actors’ access to non-redundant contacts. Burt’s constraint score is a summary index of several measures. The measure calculates the “proportion of [an actor’s] network time and energy [is] invested in [a] contact” or group (Burt 2005, 26). This component is a type of Herfindahl index. The constraint index also contains a density variable that measures the extent to which an actor’s strongest ties are to actors with many strong ties to other actors. Finally, a hierarchy measure is included in the constraint index, which provides an indication of how much an actor’s connections are concentrated through one major contact (Burt 2005, 2010).

When an actor’s constraint score is high, the actor has mostly redundant contacts and little access to the broad network. Thus, this actor is unlikely to be bridging structural holes (i.e., being a broker) and probably not an influential actor. Constraint scores are often high when an actor has few connections, belongs to a densely connected network, or a central contact connects most of the network (a hierarchical network) (Burt 2005). In these situations, structural holes are rare, not providing the opportunity for someone to act as a broker.

When the constraint score is low, actors are brokers between otherwise unconnected clusters. As brokers, actors have access to many actors throughout the larger network and have better access to information and resources. Brokerage is a form of social capital, making brokers influential actors in the network and providing them with more opportunities for rewards and advancement (Burt 2005).

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21 The equations for calculating Burt’s constraint score are included in the Chapter 3 Appendix.
Case Selection

Preferably, I would study party networks in all 50 states, but the amount and quality of data necessary to create party networks limits the number of states it is feasible to include. For this reason, I create and study party networks in seven states that vary according to the influence of money and partisan competitiveness in elections.\textsuperscript{22} In states where money has a greater influence in legislative chambers, members spend more time fundraising, especially for party committees (Powell 2012). Therefore, party networks might be more cooperative when the influence of money is higher, making it important that I include states that vary in terms of the role of money. Parties in states with high electoral competition usually have stronger organizations, so I also incorporate states with varying levels of competition (J. D. King 1989).

To select states for my sample, I organized state legislative chambers into nine categories based on the influence of money in the chamber (Powell 2012)\textsuperscript{23} and the average two-party legislative competition in the 1996-2006 elections (Hamm and Moncrief 2008). Using Table 3.1, I selected states within each of the nine categories. Table 3.1 includes 96 legislative chambers\textsuperscript{24} with the chambers included in my sample bolded. Underlined chambers are those for which I have collected data, but not yet coded. I will add them to the study in the future. Finally, chambers that I will be collecting data for in future expansions are italicized.

\textsuperscript{22} I do not use a random sample of states to ensure I have enough variation on these key variables to test my hypotheses.
\textsuperscript{23} Powell measures influence with state legislators’ responses to survey questions asking about the influence of money in their chamber on different aspects of the legislative process.
\textsuperscript{24} Louisiana and Nebraska are omitted from the table. I did not include Nebraska due to its nonpartisan elections. The runoff electoral system in Louisiana also made party legislative competition difficult to calculate, so I also eliminated it.
Table 3.1 State Selection*

<table>
<thead>
<tr>
<th>Influence of Money</th>
<th>Least Influence (Bottom 33 Chambers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Influence (Top 33 Chambers)</td>
<td>Moderate Influence (Middle 33 Chambers)</td>
</tr>
<tr>
<td>High (33-56%)</td>
<td>Nevada Upper, Maine Lower+, Maine Upper+, Minnesota Upper+, Montana Upper, New Hampshire Lower, New Hampshire Upper, North Dakota Lower, North Dakota Upper, Vermont Lower, Vermont Upper</td>
</tr>
<tr>
<td>Mid (24 – 32%)</td>
<td>North Carolina Upper, Oklahoma Lower, Oklahoma Upper, Maryland Lower, Alaska Upper, Arizona Lower+, Arizona Upper+, Arkansas Upper, Idaho Lower, Indiana Lower, Kentucky Upper, Missouri Lower, Missouri Upper</td>
</tr>
<tr>
<td>Low (0 – 23%)</td>
<td>North Carolina Lower, Michigan Lower, Michigan Upper, Alaska Lower, Hawaii Lower+, Ohio Lower, Ohio Upper, West Virginia Lower, Wisconsin Lower, Wisconsin Upper</td>
</tr>
</tbody>
</table>

Two-Party Legislative Competition 1996-2006

| Texas Upper, Connecticut Lower+, Connecticut Upper+, Delaware Lower, Delaware Upper, Kansas Upper, Rhode Island Upper |

*Key: **Bold**: Chambers included in analysis, **Underlined**: Chambers collected but not yet coded, **Italics**: Chambers to be collected and coded, **Regular**: Excluded chambers

+States with public financing for legislative elections

The motivation for selecting states within each category varied somewhat. Due to my interest in campaign finance transactions between party actors, I did not include states
with public financing of elections (Arizona, Connecticut, Hawaii, Maine). Data availability also influenced my selection of states. Unlike most states, Colorado and Texas provide easy access to all transitions in state elections. By including some states with all contributions in the data, I can compare how the sample of contributions may impact network structure.

I include in my sample several states with term limits (Colorado, Oklahoma) in an effort to explore whether party networks are different in term-limited states than states with no term limits. These states also vary by legislative professionalism, which is a measure of the governing capacity of a legislature and legislators (Squire 2007). Legislative professionalism impacts legislative effectiveness, the professionalism of candidates, and the level of campaign spending (Hamm and Moncrief 2008; Hogan and Hamm 1998). By selecting both less professional legislatures (e.g., New Mexico, North Carolina, Texas) and more professional legislatures (i.e., Pennsylvania). I can examine the impact of legislative professionalism on the structure of political parties. Finally, I selected states that also varied in region, including at least one state in every region of the United States.

The Democratic and Republican Party networks of these seven states are presented and analyzed in the comparative chapters (Chapters 5-6). In addition to the comparative analysis, I also undertake a case study using campaign finance transactions in the 2010 and 2012 Texas legislative elections (Chapter 4). Conducting a case study provides an initial test for studying structural holes in political parties. This study also

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25 Legislative professionalism is most commonly measured with the length of the legislative session, legislator compensation, and the size of the legislative staff (Hamm and Moncrief 2013; Squire 2007).
allows me to more deeply examine the structure of parties before comparing networks across states. Finally, starting with a case study makes it possible to explore the measures and analyses I will use in the comparative chapters.

**Focus on the Two Major Parties.** In this project, I focus exclusively on the two major political parties in the United States: the Democratic Party and the Republican Party. It could be interesting to include third parties (e.g., the Libertarian Party, the Working Families Party) to see whether they have connections to the two major parties and examine the structure of their organizations. However, most third party candidates and committees raise very little money and rely more on self-financing for their campaign (Bauer 2010; Francia and Herrnson 2001), making it unlikely they have substantive ties to each other and the two major parties. Therefore, including third parties in my research is not practicable since I use campaign finance transfers to measure party connections.

In New York, candidates can be listed on the ballot for more than one party. For example, in the 2000 election, U.S. Senate candidate Hillary Clinton ran on both the Democratic Party and the Working Families Party tickets. Thus, connections among party members are more than financial transactions in New York. When I add New York to the data in the future, I can then study the connections of third parties to the two major parties using party endorsements of candidates. However, for this project, I only examine the networks of the two major political parties due to the insufficient campaign finance activity of third parties.
Data Collection

As discussed above, I use transfers of campaign resources to measure ties connecting the party. In order to successfully study the full party network (including party-allied groups and individuals), I need complete data on campaign finance transactions in an election. Ideally, I would be able to map the party networks from the complete campaign network. However, this data is difficult to collect for most states because their disclosure websites are ineffective or lack downloadable data.\footnote{For example, the Oklahoma Ethics Commission website provides a public disclosure system that was often quite the opposite: more than once, the site would crash and go offline when I queried the database.} Therefore, I use 2010 and 2012 campaign finance data from the National Institute on Money in State Politics (NIMSP) to measure party networks for Iowa, New Mexico, North Carolina, Oklahoma, and Pennsylvania.

The Colorado Secretary of State and the Texas Ethics Commission websites provide downloadable campaign finance files that include more extensive information on campaign transactions than NIMSP, which allows me to measure the full party network. Consequently, I measure the party networks for Colorado and Texas with data through their state resources. Unfortunately, while including more information than the data from NIMSP\footnote{For example, the Texas data distinguishes between direct and in-kind donations.}, the files from the Texas Ethics Commission do not contain consistent donor names. For example, there are at least seven variations of gubernatorial candidate Bill White’s campaign committee name in the 2010 election file. Misspellings and minor name variations make creating a single identification number for actors difficult, which is necessary to create the networks. I cleaned the names of candidates and party committees to create an identifying number for them, but the time required to clean and prepare the...
other actors’ names to use in the analysis was not feasible for this project. Therefore, while the Texas data for party actors is comparable to the other states in the sample, I do not have comparable data for party allies. To ensure my analysis contains comparable networks, I do not include Texas in most of the comparative analysis.

To make the party network as encompassing as possible and includes party-allies, I try to include all state legislative campaign finance transactions occurring within an election. However, there are some constraints on my ability to successfully do this. The NIMSP data does not include contributions to and between non-party PACs and groups. Therefore, in the five states for which I use data from NIMSP, I am unable to model the complete campaign network. To create the party network with this data, I must focus on donations to party committees and candidates. The main concern with this is biasing the network by not including all allied-actors or connections among party actors. Another concern with the NIMSP data is the exclusion of donations to local party committees. Without these transactions, party networks may be less connected or less dense than in reality. In an attempt to ensure this research is as unbiased as possible, I create the Colorado party networks with the full data and with restrictions to match the NIMSP networks. Through this comparison, I can explore how central local party committees are to the party networks and how the lack of contributions to local parties in the NIMSP data may impact the measurement of those state party networks.

Although convenient to access, this campaign finance data (regardless of source) requires extensive cleaning before it is ready for network analysis. None of the data sources include unique identifiers that remain stable for actors that both give and receive donations. In order to accurately measure the dyadic relationships between party actors
with campaign finance transactions, I need a stable identification number for each actor. Thus, before reformatting the data into the dyadic relationships necessary for network analysis, I created a unique, stable identification for each actor contributing or donating in an election. Although this process seems simple, variations in recipient and donor names in the records made this process difficult. For example, donations to candidates go to their campaign committee, but candidates also contribute as individuals. Therefore, even after matching across recipients and donors to create a stable identification number, I had to clean this id by hand to ensure that I fully measured the contributing behavior of candidates.

Campaign finance data also needs some other modifications before being ready for network analysis. The igraph social network analysis package in R software requires aggregate transactions, so I totaled the amount of funds transferred between two actors. The total amount of resources transferred between actors is included in the party networks as a weight indicating the strength of relationships. Additionally, I created a variable noting the party affiliation of both candidates and party committees in order to identify formal party actors from party allies in the network.

I also examine the allocation strategies by party actors (Hypothesis 2) and the identity of influential actors in the networks (Hypotheses 3 and 4). To test these hypotheses, I collected biographical data and other candidate information from several sources. Through the National Institute on Money in State Politics’ data, I compiled candidate and race information, including incumbency status and race results. With the assistance of an undergraduate research assistant, I assembled candidate biographical and leadership data from state legislative websites and electoral transparency websites.
(Ballotpedia and Project Vote Smart). Information on chamber and committee leadership is from each state’s legislative website and the National Conference on State Legislatures.²⁸

**Analysis**

As previously discussed, there are multiple methods available for analyzing network data. Graphical analysis of networks is a common first step, especially in the research on political parties, because interpretation is usually straightforward. By drawing network graphs using transfers of campaign resources among parties, I provide some visual confirmation of the numeric and statistical analysis also included in my dissertation.

However, the usefulness of graphical analysis diminishes when testing hypotheses across networks. Statistical analysis using network measures allows numeric comparisons across networks and stronger hypothesis testing. Many of the common statistical models used in political science are sometimes inappropriate with network data because of the independence assumption necessary in the model (e.g., linear regression). Therefore, much of my network-level analysis focuses on comparing network measures descriptively.

Determining causality in networks can be difficult, evidence of such being the recent political network causality symposium in *American Politics Research* (Fowler et al. 2011). In this contribution, Fowler et al. outline several methods of addressing causality concerns. In many social or political network studies, it is difficult to make

²⁸ Please see Table 3A.1 in the chapter appendix for more information on the steps taken to collect and prepare the data used in this dissertation.
conclusions regarding the direction of causal effects. Does network structure influence behavior? Or does behavior influence network structure? It is likely a two-way relationship, which makes it difficult to determine the direction and strength of the relationship between networks and behavior (or outcomes) when studying both contemporaneously (Fowler et al. 2011). By studying party networks across at least two election cycles, I can provide a stronger test of the impact of party network structure on outcomes and behavior.

Another common concern is homophily and other clustering motivations interfering with the ability to draw causal inferences regarding the impact of network structure (Fowler et al. 2011; McPherson, Smith-Lovin, and Cook 2001). This concern is somewhat alleviated in my study since I expect homophily to occur within party networks. Clustering, whether it’s due to homophily or random clustering, is an important component of structural holes theory. I expect for homophily to be a component of the causal mechanism in structuring of party networks, so the concern about homophily interfering with my ability to make causal conclusions is less relevant for my study.

In Chapter 6, I undertake actor-level analysis to study the contribution strategies of candidates and examine how the structure of party networks impact candidates. I compare distributions of several network measures to assess whether candidates use party-oriented or individualist contribution strategies. Due to the larger sample size, I can use a wider variety of statistical models to evaluate my other actor-level hypotheses. By using network measures for party actors as independent variables, I can test whether broker candidates who are brokers in elections are leaders (or become leaders) in the legislature.
Summary

In this chapter, I discuss some of the important conceptual and measurement decisions I made in this project, including how to measure party networks and which state parties to study. Conceptual definitions and measurement selection are important elements to the design of research that can have major implications for the research process. Knowing how scholars collect and analyze data is also important for understanding the conclusions of research (Lupia and Alter 2014). By discussing my research decisions and process in great depth here, I hope to have made my research process accessible and understandable for other scholars.

In the next chapter, I graph and analyze Texas party networks using the concepts and measurements discussed in this chapter. Through this case study, I present a deeper analysis of the party networks than is feasible in the comparative analysis.
Chapter 3 Appendix

Equations for Calculating Network Measures

Assortativity (Newman 2010)
Measures the extent to which actors similar to one another are connected (homophily) in a graph. In this project, I examine assortative mixing by degree. Therefore, I measure whether actors with high degree are connected to one another and whether actors with low degree are connected to one another.

\[ r = \text{assortativity coefficient of graph} \]
\[ A_{ij} = \text{adjacency matrix, equals 1 if there is a tie between actors i and j} \]
\[ k_i = \text{degree of actor i} \]
\[ k_j = \text{degree of actor j} \]
\[ m = \text{total number of ties} \]
\[ \delta_{ij} = \text{Kronecker delta function, equals 1 if i = j} \]

\[ r = \frac{\sum_{ij}(A_{ij} - \frac{k_i k_j}{2m})k_i k_j}{\sum_{ij}(k_i \delta_{ij} - \frac{k_i k_j}{2m})k_i k_j} \]

Betweenness (Newman 2010)
Measures the number of geodesics (shortest paths) passing through an actor

\[ x_i = \text{betweenness score for an actor} \]
\[ n = \text{the number of shortest paths between vertices s and t that pass through actor i} \]
\[ g = \text{the total number of shortest paths between vertices s and t} \]

\[ x_i = \sum_{st} \frac{n_{st}}{g_{st}} \]

Degree (Newman 2010)
Measures the number of ties an actor has to other actors in the network

\[ k_i = \text{degree of actor i} \]
\[ n = \text{undirected graph} \]
\[ A_{ij} = \text{adjacency matrix, equals 1 if there is a tie between actors i and j} \]

\[ k_i = \sum_{j=1}^{n} A_{ij} \]
**Density** (Newman 2010)
Calculates the proportion of all possible ties that are actually present in a graph
\[ d = \frac{c}{n} \]
\( d \) = density of a graph
\( c \) = total number of ties present in a graph
\( n \) = maximum number of ties possible in a graph
\( n = n(n-1)/2 \) for undirected graphs
\( n = n(n-1) \) for directed graphs

**Modularity** (Newman 2010)
Measures the strength of community divisions
\[ Q = \text{modularity of a graph} \]
\( m \) = number of ties
\( A_{ij} \) = adjacency matrix, equals 1 if there is a tie between actors i and j
\( k_i \) = degree of actor i
\( k_j \) = degree of actor j
\( \delta_{ij} \) = Kronecker delta function, equals 1 if \( A_{ij} = 1 \)
\[ Q = \frac{1}{2m} \sum_{ij} \left( A_{ij} - \frac{k_i k_j}{2m} \right) \delta(c_i, c_j) \]

**Reciprocity** (Newman 2010)
Measures the extent to which relationships are mutual (i.e., reciprocal)
\( r \) = reciprocity in a graph
\( m \) = total number of (directed) edges in the network
\( A_{ij} \) = adjacency matrix, equals 1 if there is a tie from actor i to actor j
\( A_{ji} \) = adjacency matrix, equals 1 if there is a tie from actor j to actor i
\[ r = \frac{1}{m} \sum_{ij} A_{ij} A_{ji} \]
Transitivity (Newman 2010)
Measures the extent to which network actors and their neighbors form a small world (i.e., a complete graph).

\[ C = \text{global transitivity for a network} \]

Triangles = trio of nodes with six distinct and connected paths
Connected triple = trio of nodes with ties between at least two pairs

\[ C = \frac{(\text{number of triangles}) \times 3}{(\text{number of connected triples})} \]

Burt’s Constraint Score (Burt 1992, 2005)
Summary index measuring actors’ access to non-redundant contacts (i.e., measures how constrained actors’ are by their contacts)

\[ c_{ij} = \text{i’s dependence on contact j} \]

\[ c_{ij} = (p_{ij} + \sum_{q \neq i \neq j} p_{iq}p_{qj})^2 \]

where \( \Sigma_q p_{iq}p_{qj} = \text{extent to which i’s network contacts are invested indirectly in j} \),

\[ p_{ij} = \text{proportion of i’s time and energy invested in contact j} \]

\[ p_{ij} = z_{ij}/\sum_q z_{iq}, \]

and \( z_{ij} = \text{strength of connection between contacts i and j} \)

Therefore, the total in the parentheses measures the proportion of actor i’s ties that are directly or indirectly invested in j (Burt 2005).

\[ C_i = \text{an actor’s constraint score, which is the sum of c_{ij}} \]

\[ C_i = \sum_j c_{ij}, i \neq j \]
Table 3A.1: Data Collection and Preparation

1. Collected campaign finance transactions for 2010 and 2012 state elections from the National Institute on Money in State Politics (NIMSP) and state reporting agencies
   a. Campaign finance transactions include both direct donations and in-kind contributions
   b. Data from NIMSP (Iowa, North Carolina, New Mexico, Oklahoma, Pennsylvania) include all campaign finance transactions to state political party committees and state candidates (statewide and state legislative candidates)
   c. Data from state reporting agencies (Colorado, Texas) include all campaign finance transactions in the state election
2. Created unique identification number for each actor in each state
   a. Identification number is stable for actors both giving and receiving donations, which is necessary to fully capture the ties of candidates and party committees
   b. The stable identification number is also necessary to link actor attributes to the relationship data (i.e., campaign finance transactions)
3. Corrected name variations to consolidate candidates
   a. Cleaned datasets by hand to correct for variations or misspellings in candidates’ names
   b. This step was necessary to ensure one identification number per candidate, which ensures an accurate measurement of candidates’ ties to other party actors
4. Totaled the amount of multiple donations from one actor to another
   a. This aggregate transaction removed duplicated ties and provided a weight indicating the strength of relationships
5. Created separate relationship (campaign finance transactions) and attribute datasets
   a. The relationship datasets contain an edgelist of dyadic campaign finance transactions in a state election
   b. The attribute datasets contain actor characteristics collected from state legislative and electoral transparency websites, including candidate biographical information and leadership status
6. Created actor identification variable
   a. Added a variable indicating whether an actor was a candidate, formal party committee, group, or individual donor
7. Imported into igraph in R
   a. Edgelist of campaign finance transactions measures ties between state party actors
Chapter 4: Texas Political Party Networks

Introduction

“This is the finance primary, with candidates competing for the dollars and the organization that will come into play later, when it’s time to compete for votes. And donors are looking for some sign that a particular candidate will be competitive.” – Ross Ramsey (2013), The Texas Tribune Executive Editor

As Ramsey’s quote demonstrates, candidates need to effectively fundraise early in the campaign, which can be challenging (Biersack et al. 1993). Early money is important for success due to the need for campaign infrastructure and to increase their viability to attract other donors (Biersack et al. 1993; Francia 2001). This is where political parties have ensured their relevance in U.S. elections. By providing candidates with campaign resources and services, often early so the candidate can demonstrate viability, parties have remained an essential ally for many candidates – particularly in state legislative races and down-ballot races. Without the support of a strong or active party organization, candidates may struggle to be successful.

In this chapter, I conduct a pilot test of the applicability of structural holes theory to the study of political parties examining Texas parties. A case study also permits me to more deeply examine in greater detail the structure of each party network before comparing more aggregate network measures across states. I focus on Texas political parties partly because Texas campaign finance regulations place few limits on candidates and political parties. This ensures candidates and parties can contribute to any other candidate or party committee and does not require an adjustments for campaign finance restrictions in the analysis.

In this case study, I cannot test Hypothesis 1, which proposes that state party networks will have more structural holes when the influence of money is higher. Without
variation in the level of influence of money in the state legislature, I cannot test this relationship. However, I can explore the presence of clusters and structural holes. Coordinating the transfer of resources among party actors to the races in most need requires extensive cooperation (Heberlig and Larson 2012). If party networks have structural holes with brokers connecting clusters, which heighten the number of nonredundant contacts, then the efficacy of the party organization will be higher (Burt 1992, 2005). By incentivizing legislators to contribute to the party and other candidates with leadership positions (Currinder 2009; Heberlig and Larson 2012), parties attempt to improve operations in networks with clusters by encouraging leaders to be brokers. Therefore, I expect that Texas party electoral networks engaging in the reallocation of resources will include clusters and structural holes since that organization should increase efficiency.

I also study the identity of influential actors in Texas party networks. By connecting communities, brokers serve an important role in ensuring cooperation and efficacy in networks (Burt 2000). Identifying actors bridging structural holes illuminates influential members in networks and permits a study of party-oriented vs. individualist contribution strategies. I expect to find party-oriented allocation strategies the dominant strategy in state parties because reaching the broad party goals (e.g., majority status) benefits individual actors.²⁹

When using campaign finance transactions to measure the political party network, the actors brokering indirect links among other actors will be those giving or receiving

²⁹ This expectation is similar to Hypothesis 2 (Party-oriented allocation strategies are likely to be the dominant campaign strategy in states with competitive elections) without the comparative element.
substantially more contributions than other candidates. Therefore, since party committees, legislative campaign committees and leaders contribute extensively to other party actors (Heberlig and Larson 2012; Morehouse and Jewell 2003), I expect brokers to be state or legislative party committees or legislative leaders. *Hypothesis 3: In party networks, brokers connecting clusters are more likely to be formal party committees or legislative leaders.*

I also use structural holes theory to investigate the future success of candidates. Brokers have a competitive advantage because they have better access to resources and actors within the larger network. Thus, brokers often receive new opportunities when they arise, like promotions (Burt 2000). Candidates are expected to redistribute resources to party committees and other candidates to become leaders (Cann 2008; Currinder 2009). Those who heavily engage in donating to other candidates and party committees will serve as brokers in the party network and may be able to use their influence position to attain leadership positions. *Hypothesis 4: Brokers in party networks are more likely to become leaders than non-brokers.*

**Case Selection**

Although comparative analysis is necessary for testing the more general hypotheses regarding state party networks, conducting a case study allows me to test the applicability of structural holes theory to political parties. This study also allows me to more deeply examine the structure of some parties before comparing networks across states. Finally, starting with a case study makes it possible to explore the measures and methods I will use in the comparative analysis.
This study focuses on Texas political parties for several reasons. First, Texas has few limits on campaign contributions and expenditures. When measuring networks with campaign finance transactions, these limits pose an additional challenge since they may restrict possible connections among candidates and party committees. The lack of contribution and spending limits in Texas allows candidates and parties to form any connections (i.e., relationships) with any other candidate or party committee they desire. Thus, by studying Texas, I can analyze party networks without worrying about the interference of campaign finance restrictions.

Additionally, the Texas Ethics Commission provides extensive detail on the type and purpose of expenditures, including in-kind donations. Despite usually receiving low scores on measures of transparency and disclosure (State Integrity Investigation 2013), Texas seems to be unique in the level of detail it requires candidates and political parties to disclose in their campaign finance reports. By collecting all the contribution data from the 2010 and 2012 elections, I hope to accurately model Texas party networks. Although I do not incorporate this additional information on contributions in this research, I plan to use the data in future research on the Texas political parties.

There are several political factors that also make Texas an interesting selection for this case study. The demographic makeup of the Texas Democratic and Republican parties are quite different (Dugan 2014; Jeffers 2013; Ramsey 2014), which might impact their network structure. Moreover, Texas is a highly polarized state despite low levels of competition (Hamm and Moncrief 2008; Shor and McCarty 2011). Although competition is generally low, both parties have active electoral organizations that regularly contribute to candidates (National Institute on Money in State Politics 2014).
Texas Political Parties: A Short History. Despite being active in elections, political parties are perceived as weak organizations in Texas. Scholars have argued that Texas parties perhaps best fit Epstein’s definition of parties – a loosely organized group pursuing offices under a joint label (Collier et al. 2013). V.O. Key proposed that Texas’ large geographic size contributed to the weakness of political networks across the states and increased campaign costs (Key 1942). These weak political networks may make it difficult for parties to create an enduring organization across the state (Collier et al. 2013).

In the 1980s, the formal Texas Republican Party organization was moderately strong, but the Texas Democratic Party had a rather weak and inactive formal organization (Cotter et al. 1989). As Republicans became more competitive, Democrats strengthened their organization and engaged in more campaign activities in an effort to retain their majority (Hamm and Harmel 1993; J. R. Stanley 1992). An interesting question is whether the Texas Democratic Party organization still lags behind since the Republican Party became the dominant party in the 2000s. By measuring the party networks, I can compare the parties and examine how their organizations differ.

Throughout their existence, both major Texas parties have faced fierce ideological battles within their party (Bridges 2008). While current Democrats face less intra-party conflict than in the 1960s and 1970s, there are still skirmishes between the liberal and more moderate branches of the party. However, these tensions are minor compared to

30 In the 2010 election, Texas political party committees contributed $4.7 million to state candidates. The amount parties contributed to candidates in 2012 decreased to $3.1 million, but the absence of a gubernatorial race in the election likely explains this decrease in donations. While other industries account for more donations overall (including the financial industry and lawyers), party funding is important for candidates (Collier et al. 2013; National Institute on Money in State Politics 2013).
those in the majority party. In the last few election cycles, Republicans have experienced some fierce primary races between conservative, Tea-Party candidates and more traditional business-oriented conservatives (Burka 2013; Grieder 2013). If these ideological battles influence party allocation strategies, we should see fragmented parties with a sparse and loosely connected network between the factions. Therefore, in addition to the hypotheses developed in Chapter 2, I test whether the network structure of Texas political parties is fragmented. Hypothesis 5: If ideological divisions are impacting party activities, then Texas political party networks will be factionalized and sparse.

**Data and Methodology**

As discussed in Chapter 3, I use transfers of campaign resources (e.g., campaign donations) among party actors to measure ties connecting the party (Herrnson 2009; Wasserman and Faust 1994). For this case study, I focus on candidate-party committee networks in an effort to better understand the allocation strategies of these actors. Allied political action committees remain in the network, but I have removed individual donors.31 My analysis includes networks that retain all party actors, even informal ones. Although restricting the sample may underestimate the activities and scope of parties in state elections, this analysis provides an opportunity to study the interactions of candidates and formal party committees in a perceived weak party state.

31 Most individual donors contribute to only one or two candidates (Francia et al. 2003), making them unlikely to be substantive members of the party network. Please see Chapter 5 for a lengthier discussion of my decision to remove individual donors from party networks.
Data on campaign contributions are from the Texas Ethics Commission (TEC). The TEC provides text documents containing campaign finance transactions that are downloadable. These files include data for the 2000 – 2012 elections. Although convenient to access, this data requires extensive cleaning before it is ready to use for network analysis. Upon discovering the TEC expenditure files do not include all the contributions from party committees to candidates, I selected to use the contribution files. This decision ensures the party network is as encompassing as possible.

The biographical and other candidate information come from several sources. Through the National Institute on Money in State Politics, I compiled candidate and race information, including incumbency status and race results. Biographical and leadership data, including chamber and committee leadership, is from the Texas Legislature’s website, the National Conference on State Legislatures, and electoral transparency websites (Ballotpedia and Project Vote Smart).

To analyze the party networks, I use a combination of methods. First, I graph the transactions among actors to provide a visualization of the party networks. In these graphs, I measure donations as directed connections among actors. This approach provides an initial idea of party structure by demonstrating the presence or lack of connections among actors. In addition to providing some insights into the party organization, graphical analysis allows us to examine the validity of network measures.

32 Another great resource for state campaign finance data is the National Institute on Money in State Politics (www.followthemoney.org). For this project, I selected to use the TEC data since they include more information on each transaction.
33 The main disadvantage of using the contribution files is the lack of information on the type of campaign contributions (e.g., direct donations, in-kind contributions).
However, the usefulness of graphical analysis diminishes when testing hypotheses. Statistical analysis using network measures allows numeric comparisons and stronger hypothesis testing. In the following analysis, I use measures of centrality and structural holes to better understand the structure of each party network. Centrality measures the importance or influence of an actor within a network through their connections. The particular measures of centrality used in this chapter, including degree and betweenness, are defined in the following analysis. I use the existence of clusters to measure structural holes and identify brokers with Burt’s constraint score. Clusters are tight cliques or subgroups of actors within a network. Burt’s constraint measures the bridging of structural holes by calculating the extent to which an actor’s connections are redundant (Burt 1992). Highly constrained actors (i.e., actors with high constraint scores) have fewer opportunities for resources or information because they reach, directly or indirectly, a small number of other participants.

**Texas Political Party Networks**

Graphical analysis is a common first step in analyzing network data because it provides a visual representation of ties and relationships. By using the transfers of campaign resources among actors to measure connections, I create a graphical representation of party networks. Figure 4.1 includes the networks for both the Texas Democratic and Republican Parties. Both party networks contain isolates, which are actors on the periphery of the network with no connections to the other actors. I have removed isolates from both network graphs to better observe party organization.
In Figure 4.1, the 2012 Texas Democratic and Republican networks are clearly separated.\textsuperscript{34} Although there are some ties connecting the two parties\textsuperscript{35}, there is very little crossover of actors. This separation gives us confidence that using campaign finance contributions to measure the party networks is a valid approach.

In addition to showing two distinct party networks, Figure 4.1 provides some insight into the structure of each network. Somewhat surprisingly, the parties appear to have quite similar network structures. The Republican Party network is bigger and more

\textsuperscript{34} The white circles are allied groups and PACs without a formal party affiliation.

\textsuperscript{35} Campaign contributions from political action committees and other less strongly party-allied groups account for most of these ties connected the two party networks.
densely connected than the Democrats. However, neither network appears split into factions. The networks do include clusters, particularly the Democratic Party, but these do not noticeably fracture either party. If ideological divisions are splitting the Texas Republican Party, it does not appear in the graphical representation of the network. To better explore the structure of each party’s network, Figures 4.2 and 4.3 include individual graphs of each party network.

**Figure 4.2: 2012 Democratic Party**

In Figure 4.1, the Democratic network looked less densely connected than the Republican network. When observing only the 2012 Texas Democratic Party, the network looks even sparser. Additionally, we can now see that a few clusters are somewhat separate from the main network. By measuring connected components, we can determine the number of clusters within the network. After removing isolates, this measure indicates the presence of 20 clusters in the Democratic network. These clusters
suggest that the Democratic network contains structural holes. If influential actors bridge (e.g., connect) these clusters, then the party may have an efficient organization despite these clusters.

**Figure 4.3: 2012 Republican Party**

Figure 4.3 presents the 2012 Texas Republican Party network. As compared to the Democratic network, the Republican network is much denser. Again, there are no obvious major splits. Surprisingly, there are also 20 clusters in the Republican network. These clusters include one large cluster and quite a few small clusters, not several large ones that would indicate the presence of factions. This suggests that although some structural holes may exist in the Republican Party network, they are not as common as in the Democratic network. In the following section, I move to numeric measurements of the networks, allowing me to more directly test hypotheses.
Party Network Analysis

In an attempt to better understand the structure of both party networks, I analyze some network statistics. The measures presented in Table 4.1 provide some support of the conclusions reached from the graphical analysis. The Texas Republican Party network is larger (1004 actors) and more connected (6450 connections) than the Texas Democratic Party. In addition to having twice as many connections, the Republican network has almost half as many isolates. The average degree of actors, or the average number of connections an actor has to other actors in the network, in the Republican Party network is almost double that of actors in the Democratic network. Republican actors have direct connections to an average of six participants, while Democrats connect to an average of four other actors – suggesting a less dense network than the Republicans. These measures support the earlier observation that the Texas Republican Party network in the 2012 election was denser and more closely connected than the Democratic Party, which was also true for the 2010 election.\(^{36}\) This finding implies more coordination among the Republican actors than Democratic actors.

<table>
<thead>
<tr>
<th>Party</th>
<th>Number of Actors</th>
<th>Isolated Actors</th>
<th>Number of Connections</th>
<th>Avg. Degree (Std. Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>788</td>
<td>239</td>
<td>3108</td>
<td>3.9 (9.1)</td>
</tr>
<tr>
<td>Texas Republican Party</td>
<td>1004</td>
<td>149</td>
<td>6450</td>
<td>6.4 (15.5)</td>
</tr>
</tbody>
</table>

The calculations included in Table 4.1 are rather basic network measurements. Although they contribute to our understanding of party networks, we do not know much about the network structure beyond size and connectedness. Therefore, in Table 4.2 I

\(^{36}\) However, in the 2010 election, the difference in the connectedness of the Democratic and Republican Party networks was smaller. This may relate to the smaller size of each network and the active role of gubernatorial candidates in the 2010 election. See Appendix Table 4A.1 for the 2010 party network characteristics.
present several additional network statistics, including transitivity, assortativity, and modularity.\textsuperscript{37}

<table>
<thead>
<tr>
<th>Party</th>
<th>Transitivity</th>
<th>Assortativity</th>
<th>Modularity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>0.08</td>
<td>-0.10</td>
<td>0.48</td>
</tr>
<tr>
<td>Texas Republican Party</td>
<td>0.06</td>
<td>-0.11</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Previous research finds that the Republican Party tends to be hierarchical with power flowing downward, while Democratic Parties are often more pluralistic with a coalition of groups maneuvering for power (Freeman 1986; Skinner et al. 2012). To further explore the organizational structure of both parties, I calculate two measures of network hierarchy: transitivity and assortativity. I also analyze modularity scores, which measures the strength of a network division into communities or subgraphs. Table 4.2 presents these three measures.

Transitivity, also referred to as a clustering coefficient, measures the extent to which network actors and their neighbors form a small world (i.e., a complete graph). The transitivity measure is very small for both party networks, indicating a general lack of small worlds in either network. Instead, both parties tend to have a hierarchical network structure with several highly connected actors linking many somewhat isolated actors.\textsuperscript{38}

Table 4.2 also includes results for assortativity. Assortativity measures the extent to which actors similar to one another are connected (known as homophily). If the coefficient is high and positive, then network actors tend to be connected to other actors with similar connectivity. However, when assortativity is negative, the network is more

\textsuperscript{37} The Chapter 3 Appendix includes equations for the calculation of these three measures.
\textsuperscript{38} This is also true for the 2010 election. See Appendix Table 4A.2 for the 2010 calculations.
hierarchical with highly connected actors linked to more isolated actors. Thus, in both Texas parties, power and influence is centered at the top, conflicting with earlier theories that power is more decentralized in the Democratic Party.

To calculate modularity, one must first identify communities within the network. I use Walktrap community detection program, which partitions networks into clusters through the distance of random walks between actors. Short random walks usually stay within communities, so the program uses densely connected subsets of short random walks as an indicator of clusters. Modularity measures the strength of these divisions. A score around zero indicates the divisions are poor, while a higher score (near one) means the communities are perfect divisions (e.g., dense clusters with few connections between these communities). The highest modularity scores found by the function are modest, implying it found fairly good community divisions. However, although both parties have some clustering, these modularity scores are low enough to indicate a lack of clear major schisms in either party.

By exploring the membership of these communities, we can identify the type of clusters (e.g., ideological, gender, region) in each party network. Ideology does not appear to account for community divisions within either party. Instead, the major communities are regional in nature. The largest community in the Republican Party, which has twice as many members as the next largest community and includes 13% of the network, includes candidates and party committees in the Dallas-Fort Worth area. Houston area actors comprise the second largest community in the Republican network (holding about 6% of the network population). Other large communities include Austin
party actors (6% of actors), San Antonio candidates and committees (5.8%), and another Dallas community (6%).

The Democratic Party network also appears to have a regional organization. However, the largest community (16% of party actors) is a regionally diverse community consisting of major committees (e.g., Texas Democratic Party and the House Democratic Campaign Committee), long-serving legislators (e.g., Leticia Van de Putte) and key allies, such as Annie’s List. This community includes many main Democratic actors and may serve as the nucleus for the party (Schlesinger 1984).\textsuperscript{39} Despite the major community of key actors, other large communities in the Democratic network are regional in nature. Houston area candidates and committees form the second largest community (10% of actors). An Austin area community (7% of actors), a Dallas-Fort Worth community (5%), and a Southern Texas community (4%) are also present in the Democratic network.

Although not split into factions, both parties include regional clusters. This finding seems to support Key (1942)’s conjecture that the large geographic size of Texas makes it difficult for statewide networks to develop. Apart from a community of leaders in the Democratic network, party actors tend to develop and retain ties and share resources within their urban area.

**Allocation Strategies**

By assisting candidates in the pursuit of their goals, including winning elections,

\textsuperscript{39} Interestingly, the Republican Party network does not include an equivalent community of key party leaders and actors. Perhaps the party’s large majority provides them with a broader donor base, reducing the collection of key leaders and donors in one community.
parties can heighten cooperation and coordination in their electoral and legislative goals (Aldrich 1995; Schlesinger 1984). In many ways, the party acts as a coalition of committees, candidates, and other allied groups working together to ensure a strong party performance in the election (Herrnson 2009). If adopting a rational allocation strategy, the broad party network should work to direct resources to the races in most need, usually competitive races (Heberlig and Larson 2012). Winning these races helps the party strengthen their position in the legislature. We know leadership positions are a persuasive reward for motivating candidates to contribute to the party’s efforts (Cann 2008; Currinder 2009; Heberlig and Larson 2012). However, in states with weaker parties, other personal goals may lead candidates to adopt more individualist contribution strategies. Although some believe Texas to have weak party institutions (Collier et al. 2013; Conroy 2013; Kraemer et al. 2008), the previous network graphs suggest extensive cooperation among party actors. Therefore, I expect party contributions in Texas elections to follow party-oriented campaign strategies.

Before testing this expectation, I analyze constraint scores for all actors in both parties to see whether brokers are present. Burt’s constraint measures the access actors have beyond their direct connections. Lower scores indicate the actor is a broker in the network with influence, while higher scores suggest that actors have fewer and more

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40 Due to limitations in the calculation of Burt’s constraint score and an interest in any links among actors, I measure relationships as undirected connections for the remaining analyses. Relationships (i.e., donations) are binary and ties either exist or do not exist among actors. Therefore, two types of actors may serve as brokers in party networks: (1) party actors contributing to many other committee and candidates and (2) committees and candidates receiving many donations. Although they perhaps differ in the mechanism through which they become brokers in the network, both types connect separate communities and link disconnected party actors, which may provide them with positions of influence (Brass 1984, 2010; Burt 2005).
redundant ties which limits their weight in the network. Using this measure helps us understand how actors are embedded in their relationships, which should also help us understand power and influence within parties.

**Figure 4.4: Distribution of Constraint Scores by Party**

In Figure 4.4, I plot the distribution of constraint scores by political party. The distributions follow similar bimodal patterns for both parties. We see high densities around lower constraint scores (0.0 – 0.25) and around the maximum constraint score (1.0). Actors with a constraint score of 1.0 are relatively insignificant actors in the network. They have ties to few actors beyond their immediate relationships. Actors with low constraint scores, on the other hand, have positions of influence in the network by connecting otherwise unconnected actors. These brokers give or receive a substantial
number of donations. Unsurprising, the state party committees are major brokers in both parties.

The existence of numerous brokers in both networks provides some initial evidence that actors adopt party-oriented contribution strategies. If parties consist mainly of highly constrained actors and few brokers, this would indicate that most actors follow an individualistic allocation strategy that involve donating to just a few close allies or self-financing. However, we see many party actors (both formal party committees and candidates) serving as brokers and transferring resources to other actors, supporting the expectation that actors are cooperating and contributing with the party’s interests in mind.

To more directly test Hypothesis 2, I plot the distribution of constraint scores by the competitiveness of candidates. Heberlig and Larson (2012) propose that party-oriented donations should go to competitive candidates, so I expect that competitive candidates will be brokers in the party network if party actors target their resources to those races. Although the full party network is included the previous figure, Figures 4.5 and 4.6 only include candidates.\textsuperscript{41} If competitive candidates display a higher density of low constraint scores (meaning they have access to many other actors in the network), then party actors have adopted party-oriented campaign strategies. Figure 4.5 presents the results for the Texas Democratic Party.

\textsuperscript{41}The constraint scores calculations include the full network sample, so it measures candidates’ connections in the entire network. However, since party committees and PACs do not have a measure of race competitiveness, only candidates are included in the distribution plots.
The distribution plots in Figure 4.5 indicate that competitive candidates do have lower constraint scores than candidates in uncompetitive races. High levels of resources are likely flowing to competitive candidates in an effort to gain or maintain a majority of seats, resulting in them being highly connected in the network. Candidates in competitive races act as brokers in the Democratic Party network by connecting party committees and candidates in different communities. By linking other actors, these competitive candidates have access to much of the network. The central role of competitive candidates indicates the presence of a party-oriented campaign strategy rather than individualist giving, which supports Hypothesis 2.
Uncontested candidates also have low constraint scores. These candidates act as brokers by redistributing money throughout the network and connecting party committees and candidates. The brokerage role of uncontested candidates also supports the expectation that candidates adopt a party-oriented campaign strategy since they are working towards the party’s goals by redistributing resources throughout the party.

The distributions of Republican candidate constraint scores plotted in Figure 4.6 are very similar to the Democratic plots. However, the use of a party-oriented strategy is even clearer in Figure 4.6. Uncontested candidates are still frequently brokers, suggesting they are redistributing money to other party actors. Most competitive candidates also have low constraint scores in the Republican Party. These candidates connect a broad
range of actors, suggesting party committees and candidates distribute resources in an effort to maintain the party majority.

Interestingly, there is a group of competitive candidates with higher constraint scores. These candidates do not serve as an important link between the connections of other candidates and do not have access to the broad network. Former Representative Dee Margo is one of the competitive candidates with a high constraint score. Margo was one of the least conservative Republicans in the 2011 Texas House (M. P. Jones 2011). Perhaps his ideological stances discouraged other party actors from contributing to his campaign or made him less viable, distancing him from the party network.

The distribution of constraint scores by candidate competitiveness is surprisingly similar for both the Republican and Democratic Party. The density of constraint scores centers on low scores, suggesting candidates are highly connected actors within party networks. Figures 4.5 and 4.6 demonstrate both parties are able to coordinate a party-oriented strategy with uncontested candidates redistributing substantial resources and competitive candidates receiving essential resources from diverse party actors. These results are important because they support previous findings at the Congressional level and suggest that Texas party organizations may not be as weak as often assumed.

Identity of Brokers

Structural holes theory also provides a path for identifying influential actors and studying the impact of network structure on actors. Actors that bridge structural holes and connect clusters (i.e., brokers) play an important role in networks. These actors connect the flow of resources between network groups. In addition to giving brokers access to
resources and information, bridging structural holes provides brokers with more influence and a competitive advantage (Burt 1992, 2000). Stemming from research on campaigns and elections, I expect brokers to be leaders and state/legislative party committees (Hypothesis 3).

Tables 4.3 and 4.4 present the most connected ten actors in Democratic and Republican networks, respectively. Each table presents three measures of influence: degree, betweenness, and constraint. Degree is the number of connections each actor has within the network. Betweenness and constraint are both measures of brokerage. Higher betweenness scores indicate central actors that act as conduits between actors within the network. As a reminder, lower constraint scores suggest that the actor is a broker and has an influential position in the network.

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Betweenness</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>178</td>
<td>70109</td>
<td>0.014</td>
</tr>
<tr>
<td>House Democratic Campaign Committee</td>
<td>69</td>
<td>9818</td>
<td>0.036</td>
</tr>
<tr>
<td>Texas Democratic Women PAC</td>
<td>65</td>
<td>17037</td>
<td>0.028</td>
</tr>
<tr>
<td>Harris County Democratic Party</td>
<td>49</td>
<td>11162</td>
<td>0.035</td>
</tr>
<tr>
<td>Texas Stonewall Democratic Caucus</td>
<td>47</td>
<td>8578</td>
<td>0.038</td>
</tr>
<tr>
<td>Senator Wendy Davis</td>
<td>44</td>
<td>5198</td>
<td>0.054</td>
</tr>
<tr>
<td>Annie’s List</td>
<td>39</td>
<td>2017</td>
<td>0.041</td>
</tr>
<tr>
<td>Representative Donna Howard</td>
<td>33</td>
<td>4082</td>
<td>0.057</td>
</tr>
<tr>
<td>Travis County Democratic Party</td>
<td>31</td>
<td>4457</td>
<td>0.063</td>
</tr>
<tr>
<td>Representative Elliott Naishtat</td>
<td>28</td>
<td>3416</td>
<td>0.058</td>
</tr>
<tr>
<td>Sylvia Garcia (Senate candidate in 2013 special election)</td>
<td>26</td>
<td>3250</td>
<td>0.058</td>
</tr>
</tbody>
</table>

Table 4.3 lists the top ten most connected Democratic actors in descending order by degree. In addition to being influential, the low constraint scores and high

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42 Equations for the calculation of these measures are included in the Chapter 3 Appendix.
betweenness scores indicate that all ten of these actors are brokers in the Democratic Party. Unsurprisingly, the state committee is the most connected actor within the network. One legislative campaign committee and several local parties are also influential actors. The Harris County Democratic Party (Houston) and Travis County Democratic Party (Austin) represent large cities, providing the opportunity to connect to many candidates and smaller, local party committees. These actors are those we would expect to be in this list. Thus, we do find support for the hypothesis that major party committees will be brokers.

More surprising is the inclusion of three female candidates and two women’s groups (Texas Democratic Women PAC, Annie’s List) in the top ten since women often struggle to gain prominence within parties (Center for American Women and Politics 2001). Interestingly, it seems as though Senator Wendy Davis was positioning herself to run for statewide office. In the 2010 election, Senator Davis was not even in the top 50 most influential actors in her Party. However, in the 2012 election, she is a key broker and one of the most significant actors in the Texas Democratic Party. By increasing her donations to other candidates and strategically allocating them, Senator Davis raised her role in the Democratic Party network, which may be important for her gubernatorial run.

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43 See Appendix Table 4A.5 for the top influential Democratic actors in the 2010 election.
Table 4.4: Top Republican Actors

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Betweenness</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Federation of Republican Women</td>
<td>332</td>
<td>137923.9</td>
<td>0.01</td>
</tr>
<tr>
<td>Texas Republican Party</td>
<td>255</td>
<td>117636.8</td>
<td>0.011</td>
</tr>
<tr>
<td>Conservative Republicans of Texas</td>
<td>105</td>
<td>26110.9</td>
<td>0.017</td>
</tr>
<tr>
<td>Representative Mark Shelton (Senate candidate)</td>
<td>54</td>
<td>5562.2</td>
<td>0.041</td>
</tr>
<tr>
<td>Texas Republican Representatives Campaign Committee</td>
<td>49</td>
<td>4106.5</td>
<td>0.034</td>
</tr>
<tr>
<td>Senator Dan Patrick</td>
<td>47</td>
<td>5505.3</td>
<td>0.042</td>
</tr>
<tr>
<td>Associated Republicans of Texas</td>
<td>46</td>
<td>6016.9</td>
<td>0.028</td>
</tr>
<tr>
<td>Bexar County Republican Women</td>
<td>45</td>
<td>7308.7</td>
<td>0.076</td>
</tr>
<tr>
<td>Representative Joe Straus</td>
<td>42</td>
<td>6287.8</td>
<td>0.047</td>
</tr>
<tr>
<td>Greater Houston Council of Federated Republican Women</td>
<td>39</td>
<td>1535.3</td>
<td>0.095</td>
</tr>
</tbody>
</table>

1^1 Descriptive statistics for these three measures are included in Appendix Table 4A.4.

The list of ten most influential actors in the Republican Party network also includes some surprises. Like the Democratic Party, the Republican state party and house legislative campaign committee are highly connected and are brokers. The list also includes a conservative organization (Conservative Republicans of Texas). However, the presence of this group does not appear to divide the party (see Figures 4.1 and 4.3). Several important candidates are also key actors in the Republican Party. Representative Joe Straus is currently House Speaker, while Senator Dan Patrick is seeking a statewide office.

Several women’s groups are also highly influential in the Texas Republican Party. The Texas Federation of Republican Women is much more connected than any other actor and clearly a broker. Although the Republican Party campaign organization was more professional and established than the Democratic Party in Texas by the late 1980s, the party continued to lag behind in grassroots organization (Gibson et al. 1983; J. R. Stanley 1992). The Texas Federation of Republican Women historically served as the grassroots organization of the Texas Republican Party (J. R. Stanley 1992). Interestingly,
the Texas Federation of Republican Women must still be providing key grassroots organization in recent elections.\textsuperscript{44}

To better evaluate Hypotheses 3 and 4, I compare the constraint scores by current and future leadership.\textsuperscript{45} In this paper, I focus on committee chairs and vice-chairs. Texas has few elected legislative leaders. Therefore, committee leadership provides the best option for exploring whether brokers are more likely to be leaders. For Democratic candidates, I use vice-chair positions since few Democrats receive committee chairs.\textsuperscript{46} Table 4.5 presents the results for incumbents with a committee leadership position prior to the 2012 election.

### Table 4.5: Candidate Average Connections and Constraint Scores by Committee Leadership

<table>
<thead>
<tr>
<th>Committee Leadership</th>
<th>Number</th>
<th>Average Constraint</th>
<th>Average Degree</th>
<th>Std Dev</th>
<th>Max</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic Vice-Chairs</td>
<td>25</td>
<td>0.11**</td>
<td>15.9**</td>
<td>9.3</td>
<td>44</td>
<td>398</td>
</tr>
<tr>
<td>Republican Chairs</td>
<td>38</td>
<td>0.11**</td>
<td>16.6**</td>
<td>8.7</td>
<td>47</td>
<td>632</td>
</tr>
<tr>
<td>Republican Non-Chairs</td>
<td>212</td>
<td>0.33</td>
<td>9.1</td>
<td>8.4</td>
<td>54</td>
<td>1934</td>
</tr>
<tr>
<td>Democratic Non-Vice-Chairs</td>
<td>115</td>
<td>0.36</td>
<td>7.1</td>
<td>6.1</td>
<td>26</td>
<td>839</td>
</tr>
</tbody>
</table>

*p-value < 0.05, **p-value < 0.01

Both Democratic committee vice-chairs and Republican committee chairs have, on average, significantly more contacts and a significantly lower mean constraint score. These results demonstrate that committee leaders are more likely to be brokers in the

\textsuperscript{44} The Texas Federation of Republican Women is also one of the most influential actors in the Republican Party in the 2010 election. See Table 4A.6 in the Appendix for the list of 2010 top Republican actors.

\textsuperscript{45} This analysis only includes candidates since party committees and PACs cannot serve as legislative leaders.

\textsuperscript{46} In Texas, there is a long-standing tradition of assigning committee chairs in a bipartisan manner, so the minority party does receive some committee chair positions (Hamm and Harmel 1993).
network and influential actors. Scholars have previously found that leaders are major donors to formal party committees and other candidates (Cann 2008; Currinder 2009; Heberlig and Larson 2012), so finding that leaders are significantly more likely to be brokers provides some validation for using this approach to study influence within parties.

To explore whether brokers are more likely to become leaders (Hypothesis 4), I plot the distribution of constraint scores for winning candidates who are current leaders, become committee leaders, and those without leadership positions. By plotting these distributions, I can examine all three categories simultaneously.

**Figure 4.7: Distributions of Constraint Scores by Leadership Status**

![Diagram showing distributions of constraint scores by leadership status.](image-url)
In Figure 4.7, we see that current leaders in both parties have significantly lower constraint scores than other winning candidates in both parties. This further supports the findings in Table 4.5 that leaders are more likely to be brokers. Additionally, winning candidates who become committee chairs in the subsequent session have lower constraint scores than non-chairs. For the Republicans, the distribution of constraint scores for new chairs follows closely that of current chairs, which suggests that actors seeking leadership positions are very involved in the allocation of resources to other Republican actors. This stronger relationship is reasonable since Republican chamber leaders have substantial control over the assignment of committee chairs. Although preliminary, these results provide initial evidence that brokers are more likely to become leaders in both parties.47

In this section, I presented evidence supporting several of the hypotheses. First, state party committees, legislative campaign committees and leaders are more likely to be brokers. This finding is important because it corroborates with previous research, which provides some validation for using social network analysis and structural holes theory to study the role and influence of actors within party organizations. Secondly, brokers are more likely to become leaders than other candidates. From this analysis, we know this approach is useful for determining influence and predicting future leaders, which I pursue in more depth in subsequent research.

47 The small sample size with one state makes it difficult to perform statistical tests on only the actors becoming leaders (not leaders previously). However, when comparing the mean constraint for new chairs and non-chairs, the direction of this relationship holds up for this smaller, more accurate sample. See Appendix Table 4A.7.
Conclusions

This study is an initial test for the use of structural holes theory to study the structure of state political parties. Using structural holes theory to study parties is important because it provides a method for measuring factions and cooperation among party actors. I find that neither Texas party is split into factions. This is a rather surprising finding since the Tea Party has been active in challenging and defeating Republican incumbents (Burka 2013; Grieder 2013). In the next step of this project, I compare primary and general election networks to assess whether factions are present in the Republican primary network.

While I do not find that Texas parties are factionalized, the results support my other expectations. Although factions are not present, there are numerous clusters in each party network. By identifying brokers bridging the structural holes between these clusters, I determine that the state party committee, legislative campaign committees, and leaders are influential actors in both parties. These results confirm previous findings at the congressional level and validate the use of this approach to identify influential party actors.

The assumed weakness of Texas political parties could lead candidates to pursue individual goals when contributing to other candidates (if they even contribute to other candidates), especially for the minority Democrats. However, I find that party organizations adopt a party-oriented campaign strategy. In both party networks, competitive candidates are brokers, indicating they receive substantial support from party actors. Party committees and candidates appear to cooperate and reallocate resources in
both parties in an effort to win seats. From this analysis, we now know that a traditional ‘weak-party’ state like Texas can have effective and extensive party networks.

Although both Texas parties are more cooperative and cohesive than expected, there is variation in the structure of each party network. Actors in the Texas Republican Party network have more direct connections to other actors in the network than Texas Democratic Party actors, resulting in a larger and more connected network. The more connected structure of the Texas Republican Party may be due to the dominance of the party in state politics. The poor performance of the Texas Democratic Party in statewide elections for the past several decades may have stunted the incentive for many candidates to cooperate with the party (Ceaser and Saldin 2005; Draper 2013; Henson and Blank 2013).

In this study, I also examine whether candidates translate positions of influence in the party network into leadership positions. By using Burt’s constraint score to identify brokers, I measure the influence of candidates within the party. I find that candidates serving as brokers are more likely to win committee chair positions in the subsequent legislative session than non-brokers. This approach provides a method for understanding the path to leadership.

This case study provides a framework for subsequent analysis in my dissertation. The next stage is a comparative analysis of political party networks in seven states. In this comparative analysis, I will use these measures to explore the presence and impact of structural holes in party networks.
Chapter 4 Appendix

Table 4A.1: 2010 Party Network Characteristics

<table>
<thead>
<tr>
<th>Party</th>
<th>Number of Actors</th>
<th>Isolated Actors</th>
<th>Number of Connections</th>
<th>Avg. Degree (Std Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>609</td>
<td>202</td>
<td>1966</td>
<td>4.8 (12)</td>
</tr>
<tr>
<td>Texas Republican Party</td>
<td>921</td>
<td>148</td>
<td>2879</td>
<td>5.4 (12.4)</td>
</tr>
</tbody>
</table>

Table 4A.2: 2010 Party Network Measurements

<table>
<thead>
<tr>
<th>Party</th>
<th>Transitivity</th>
<th>Assortativity</th>
<th>Modularity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>0.1</td>
<td>-0.12</td>
<td>0.37</td>
</tr>
<tr>
<td>Texas Republican Party</td>
<td>0.05</td>
<td>-0.13</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Table 4A.3: Descriptive Statistics for 2012 Democratic Influence Measures

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>0</td>
<td>178</td>
<td>3.94</td>
<td>9.15</td>
</tr>
<tr>
<td>Betweenness</td>
<td>0</td>
<td>70109</td>
<td>397.84</td>
<td>2700.64</td>
</tr>
<tr>
<td>Constraint Score</td>
<td>0.014</td>
<td>1</td>
<td>0.56</td>
<td>0.376</td>
</tr>
</tbody>
</table>

Table 4A.4: Descriptive Statistics for 2012 Republican Influence Measures

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>0</td>
<td>332</td>
<td>6.42</td>
<td>15.5</td>
</tr>
<tr>
<td>Betweenness</td>
<td>0</td>
<td>137924</td>
<td>742.39</td>
<td>5842.09</td>
</tr>
<tr>
<td>Constraint Score</td>
<td>0.01</td>
<td>1</td>
<td>0.5</td>
<td>0.376</td>
</tr>
</tbody>
</table>

Table 4A.5: 2010 Top Democratic Actors

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Betweenness</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Democratic Party</td>
<td>224</td>
<td>72896</td>
<td>0.016</td>
</tr>
<tr>
<td>William (Bill) H. White (Gubernatorial candidate)</td>
<td>141</td>
<td>52900</td>
<td>0.019</td>
</tr>
<tr>
<td>House Democratic Campaign Committee</td>
<td>83</td>
<td>5036</td>
<td>0.042</td>
</tr>
<tr>
<td>Texas Democratic Women PAC</td>
<td>58</td>
<td>12163</td>
<td>0.031</td>
</tr>
<tr>
<td>Representative Carol Kent</td>
<td>46</td>
<td>3117</td>
<td>0.049</td>
</tr>
<tr>
<td>Harris County Democratic Party</td>
<td>46</td>
<td>5656</td>
<td>0.043</td>
</tr>
<tr>
<td>William C. White (Judicial candidate)</td>
<td>45</td>
<td>3400</td>
<td>0.054</td>
</tr>
<tr>
<td>Senator Kirk P. Watson</td>
<td>45</td>
<td>5054</td>
<td>0.046</td>
</tr>
<tr>
<td>Representative Diana M. Maldonado</td>
<td>43</td>
<td>3534</td>
<td>0.047</td>
</tr>
<tr>
<td>Representative Garnet F. Coleman</td>
<td>38</td>
<td>2355</td>
<td>0.051</td>
</tr>
</tbody>
</table>
Table 4A.6: 2010 Top Republican Actors

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Betweenness</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Republican Party</td>
<td>225</td>
<td>124213</td>
<td>0.010</td>
</tr>
<tr>
<td>Texas Federation of Republican Women</td>
<td>217</td>
<td>121585</td>
<td>0.007</td>
</tr>
<tr>
<td>Governor Rick Perry</td>
<td>118</td>
<td>60085</td>
<td>0.017</td>
</tr>
<tr>
<td>Representative Joe Straus</td>
<td>56</td>
<td>10407</td>
<td>0.036</td>
</tr>
<tr>
<td>Attorney General Greg Abbott</td>
<td>54</td>
<td>16639</td>
<td>0.025</td>
</tr>
<tr>
<td>Texas House Leadership Fund</td>
<td>53</td>
<td>4619</td>
<td>0.031</td>
</tr>
<tr>
<td>Lt. Gov. David H. Dewhurst</td>
<td>52</td>
<td>13835</td>
<td>0.029</td>
</tr>
<tr>
<td>U.S. Senator Kay Baily Hutchison (Gubernatorial candidate)</td>
<td>46</td>
<td>14457</td>
<td>0.029</td>
</tr>
<tr>
<td>Representative Gary Elkins</td>
<td>46</td>
<td>24028</td>
<td>0.029</td>
</tr>
<tr>
<td>GOPAC-TX</td>
<td>46</td>
<td>3613</td>
<td>0.028</td>
</tr>
</tbody>
</table>

Table 4A.7: Candidate Average Connections and Constraint Scores by Future Committee Leadership

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Average Constraint</th>
<th>Average Degree</th>
<th>Std Dev</th>
<th>Max</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic New Vice-Chairs</td>
<td>23</td>
<td>0.15**</td>
<td>11.1*</td>
<td>6.4</td>
<td>26</td>
<td>255</td>
</tr>
<tr>
<td>Republican New Chairs</td>
<td>29</td>
<td>0.11**</td>
<td>15.0**</td>
<td>6.5</td>
<td>29</td>
<td>436</td>
</tr>
<tr>
<td>Republican Non-Chairs</td>
<td>134</td>
<td>0.32</td>
<td>8.9</td>
<td>8.2</td>
<td>42</td>
<td>1189</td>
</tr>
<tr>
<td>Democratic Non-Vice-Chairs</td>
<td>45</td>
<td>0.38</td>
<td>7.6</td>
<td>6.1</td>
<td>23</td>
<td>350</td>
</tr>
</tbody>
</table>

1 Table excludes current committee chairs that retain their leadership position.
*p-value < 0.05, **p-value <0.01
Chapter 5: Comparative Party Network Analysis

Introduction

Although studying Texas party networks is enlightening as to the structure and operation of state political parties, the pilot study does not provide much insight into the differences of party networks. Does the structure of party networks vary across states? Or do all state Democratic or Republican Party networks share similar organization? If the structure of party networks does differ across states, what accounts for this variation? In this chapter, I compare party networks across states in an attempt to answer these questions and to better understand political parties. Before examining party networks, however, I determine the appropriateness of this approach by outlining the need for comparative analysis and analyzing state donor pools. Additionally, I examine the consequences of different measurements of party networks to ensure I include the most appropriate configuration in the analysis.

Need for Comparative Analysis

Comparative state analysis is necessary to better understand the structure of political parties for several reasons. First, a comparative approach permits scholars to study differences in political organizations across states. When focusing on parties at the national level or in one state, like my analysis in Chapter 4, it is difficult to identify variances in the structure and composition of party networks. Analyzing party networks across multiple states will help illuminate differences in these networks, which is currently missing from the literature on political parties and will help further develop our theories about political parties and elections. In their article on the need for comparative
organizational analysis, King et al. (2009) describe the benefits of comparative methodologies as follows.

“Comparative analysis is situated between inductive and deductive reasoning, theoretical abstraction, and empirical description, and the organization and its context. Comparative work inherently focuses on the concurrent needs to theorize and understand differences in organizations and to identify the contextual limits of generalizability, thus allowing for the unexpected to move theory in new directions” (King et al. 2009, 4).

By using comparative analyses to examine empirical relationships (M. E. Jewell 1982; Lijphart 1971), we can also advance and refine existing theories of political phenomena, including political parties. Importantly, the meaningful variation in state politics and institutions provides the necessary setting to actually conduct comparative work (M. E. Jewell 1982; G. Moncrief and Squire 2013; Squire and Hamm 2005).

Additionally, comparative analysis provides a method for studying the impact of the composition of the donor pool, the electoral context, and institutions on party networks. In the preceding study of Texas parties, I am unable to explore how low electoral competition, and the absence of campaign donation limits impacts the structure of party networks. Political institutions and the electoral context often have a significant impact on the operation of state politics (Hamm and Moncrief 2013; G. Moncrief and Squire 2013; G. Moncrief, Thompson, and Cassie 1996; A. Rosenthal 2008; Tolbert 2003). It seems likely that these factors also impact the allocation patterns of party actors, since the incentive for party actors to cooperate with the party may change depending on the state’s institutions and electoral context. This may lead to different party network structures across states. I discuss my expectations regarding the impact of the electoral context on party networks later in this chapter.
Undertaking a comparative study also allows me to examine the existence and variance of structural holes across party networks. As discussed in Chapter 2, I expect parties to vary in the extent to which structural holes exist in their network. Burt’s (1992, 2005) structural holes theory proposes that networks are more efficient and successful when individual actors (i.e., brokers) bridge holes or gaps between clusters. To examine and understand how structural holes impact the operation of parties, comparative data is necessary. By comparing party networks across states and election cycles, I provide the first analysis of the existence and impact of structural holes in state political parties.

By undertaking comparative state analysis, I can also assess the generalizability and reliability of my pilot study findings. Although often difficult, research should strive for external validity by demonstrating that results hold across different people, places, and time (King et al. 1994). Testing causal relationships and demonstrating the generalizability of results is difficult, perhaps impossible, when examining data for a single case. Comparative analysis allows scholars to identify and explain heterogeneity in political organizations and phenomena (B. G. King et al. 2009) with a more representative sample than one state.

Relatedly, comparative analysis permits the testing of measurement validity. Measurement validity is often overlooked in political science research, but determining the validity and meaningfulness of measures is important (Adcock and Collier 2002). One frequent concern with social and political network analysis is the construct validity of network measures (Marsden 1990). With comparative data, I can compare measures across party networks, providing a test of measurement and construct validity. Additionally, by using a comparative approach, I can explore how data sources and the
criteria used to create networks impact network analysis. This is important since few studies of networks evaluate how decisions regarding data and network creation may impact their results.

Clearly, a comparative study of state political parties is necessary to fully understand the network structure of subnational parties. Adopting a comparative approach allows me to explore the usefulness and validity of a party network approach, while also permitting some flexibility in my research. The single-state studies (Masket and Shor 2011; Masket 2009, 2010, 2011) currently comprising the state political networks literature have moved forward the study of state political parties. However, these studies struggle to provide a more general understanding of state party organization.

**Examination of State Donor Pools**

As outlined above, comparative analysis is an important approach to research for both methodological and substantive reasons. However, meaningful variation must exist for a comparative approach to be useful. In order to know whether a comparative method is appropriate, scholars need to examine and understand their data without simply assuming that variation exists.

To better understand differences in the composition and structure of party networks, we first need to study and understand the donor pool in the state elections. The identity and participation level of donors is important for several reasons. First, we must know the makeup of state donor pools in order to identify the relevant players in state elections and political parties. We want to avoid enforcing a particular structure on state party networks. However, we do need to know which actors are on the periphery and may
have little bearing on the state party coalition, allowing us to focus more directly on the connections of the actors of most interest (i.e., candidates, formal party committees).

Knowing the composition and behavior of donors in state elections also helps provide insights into a state’s electoral context. Electoral and institutional factors like competition and campaign finance regulations impact the giving of donations (Bonneau 2007; Hogan 2005; Seabrook 2010; Tolbert 2003), which may influence party networks. Therefore, understanding the role of different types of contributors is helpful for developing expectations about party structure. If, for example, we find that candidates rarely donate to other candidates in some states, we would expect party networks in those states to be smaller or less dense.

Apart from methodological reasons, there is also an important normative motivation to examine the source of state candidates’ funds. Money, especially campaign donations and support, impacts the legislative process and policy (Lessig 2011; Powell 2012, 2013). If not always in a direct manner, money does tend to influence the receptiveness and availability of elected officeholders to the desires of donors (S. Gordon 2005; Lessig 2011; Powell 2012). Therefore, understanding the makeup of donor pools is key to understanding how policy and representation may be biased.

Despite a substantial research on money in elections, there is still much we do not know about donors, especially in state elections. Like Congressional elections, the main source of money for state legislative candidates is large donors (Malbin et al. 2012; Malbin 2013). However, beyond some general statistics on contributions and expenditures (Barber 2010; Casey et al. 2012; La Raja 2003, 2008), we do not know how key party committees and candidates work together to fund state campaigns. Knowing
the role of party committees and candidates is essential for understanding the context within which party networks operate. Thus, in this section, I examine the identity and role of four types of contributors (individuals, groups, party committees, and candidates) in state elections.

Source of Donations in State Elections. A relatively small proportion of the U.S. population funds the campaigns of candidates, parties and other groups (Malbin 2013). In the 2012 election, U.S. House candidates received about 10% of their funds from individuals contributing less than $200 in the election (Campaign Finance Institute 2013). Instead of targeting these small donors, congressional candidates raise 70% of their money from large donors (contributing more than $1000) and political action committees (PACs) (Malbin 2013). State candidates rely slightly more on small donors with 15% of their money coming from individuals donating under $250, but the majority of their funds also come from large donors and PACs (Malbin et al. 2012; Malbin 2013). However, despite the work of Michael Malbin and others giving us a general picture of funding sources in elections, rarely do scholars examine in depth differences in the source of funds across states. We especially know little about the role of candidates and different party committees in funding candidates for state office. In an effort to better understand the donor pools in state elections, I compare the source of state party committees’, statewide candidates’, and legislative candidates’ funds with the expectation that the reliance on party and candidate donations will vary across states.\footnote{48 When I use the terms candidates or state candidates, I am referring to statewide and state legislative candidates unless otherwise noted.}
Figure 5.1 plots the percentage of their funds that state candidates and party committees receive from individual donors, groups and PACs, fellow candidates, and party committees in the 2010 and 2012 elections for each of the seven states (Colorado, Iowa, New Mexico, North Carolina, Oklahoma, Pennsylvania, and Texas) included in this study. In this figure, we see that funding sources do vary across states and elections. For example, in several states, groups overtake individuals as the main source of donations for candidates and party committees in the 2012 election. Donations from individuals and groups comprise a slight majority of candidates’ and party committees’ funds in every state. This supports findings in previous research on donors to state candidates (e.g., Malbin and Gais 1998).

The percentage of funds coming from candidates and party committees varies, but is substantial in about half of the states. Party committees account for a considerable
proportion of campaign donations in Iowa, North Carolina (2010 election), and Pennsylvania. On the other hand, the financial support of party committees is fairly inconsequential in Colorado, New Mexico, Oklahoma, and Texas. Candidates redistribute a significant amount of funds and resources to other candidates and party committees in Iowa, New Mexico, North Carolina, and Pennsylvania. Candidates contribute a relatively small portion of campaign funds in the remaining states (Colorado, Oklahoma, Texas). Surprisingly, candidates contribute more money than party committees in several states, including in New Mexico and Oklahoma. Later in this section, I explore whether candidates are contributing to other candidates or party committees, which may help provide some insight into why candidates in some states are contributing a larger proportion of total campaign donations than party committees.

Despite some variation, candidates and party committees are definitely important donors in most state elections. This provides some evidence that using campaign finance transfers among party actors is an appropriate method of measuring relationships and the party network. This variation in the composition of state donor pools, particularly in terms of the role of candidates and party committees, suggests that the structure of state party networks may differ. For instance, party networks may be small and less connected in states with party committees accounting for a minor proportion of campaign donations. To develop a better idea for the activity levels of these four types of contributors, I plot the average number of donations for each type by state and election cycle in Figure 5.2.
It is clear in Figure 5.2 that most donors, regardless of type, contribute a small number of donations in an election cycle. Only groups and candidates ever contribute more than an average of ten donations. About half of all donors contributed less than five donations. This is especially true for individuals, who never gave more than an average of five donations. Many individual donors tend to only contribute to candidates in their district. Additionally, individual donors, especially those that only donate occasionally, usually only donate to one or two candidates (Francia, Herrnson, Green, et al. 2003). Therefore, the finding that individuals give few donations supports previous research. It also suggests that individual donors are fairly minor players in state elections despite the fact that they account for about 30% of total donations to state party committees and candidates. From Figure 5.2, it looks as though individual donors are probably peripheral
actors in state campaign networks because they usually give such a small number of donations.

In every state, groups contribute more donations on average than individual donors. Additionally, apart from Colorado and New Mexico, groups usually contribute more donations than candidates and party committees. This high donor activity level of groups makes sense because groups and political action committees frequently give to multiple candidates, and sometimes multiple parties, in an effort to maximize the potential for representation or influence (Brunell 2005; Cassie and Thompson 1998; Magee 2002; Thompson et al. 1994).

Candidates and party committees are also fairly active donors in these state elections. Although candidates and party committees donate a low number of average donations in several states, the other donor types also tend to contribute only a few donations. Interestingly, candidates give a higher number of donations on average than party committees in quite a few elections. The difference is especially large in Colorado, which is surprising since donations from candidates accounted for such a small percentage of campaign funds. Currently, there are no comparative studies of candidate-to-candidate/party donations in state elections, so we know very little about the donating behavior of candidates beyond self-financing. Seeing as member-to-member donations on a large-scale is a relatively recent trend in Congressional elections (Heberlig and Larson 2012), the high level of engagement in candidates contributing to other candidates and party committees is unexpected.

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49 One concern might be that self-funders are driving up this measure. To check this, I calculated the average number of donations given by candidates without self-funders in Colorado. Although slightly lower, the difference is not substantial and candidates continue to be the group giving the highest average number of donations.
Even though scholars frequently study the activities of party committees in state elections, the lack of comprehensive studies of state donors pools has made it difficult to compare candidate and party contributions. The discovery that both candidates and party committees are active donors that contribute a sizable amount of funds in (at least some) state elections demonstrates their relevance and the importance of studying them.

From the preceding analysis, it is clear that candidates and party committees receive a significant portion of their campaign funds from individuals and groups. However, while groups usually contribute to multiple candidates and party committees, individuals tend to donate to just one or two candidates. In an effort to better understand individual donors in state elections, I plot the ratio of individual donors to the voting eligible population (VEP) in state elections in Figure 5.3\(^{50}\).

![Figure 5.3: Ratio of Individual Donors to the Voting Eligible Population (VEP) in State Elections](http://elections.gmu.edu/index.html)

\(^{50}\) Voting eligible population data from the United States Elections Project (http://elections.gmu.edu/index.html).
The level of individuals contributing to state candidates and party committees widely varies. In Colorado, Iowa and New Mexico (2010 election), the ratio of donors to the VEP is relatively small. Around one out of 50 eligible voters gives at least one donation. Donating to state candidates or party committees is relatively rare among individuals in the other states, particularly in the 2012 election. For instance, only one out of about 275 individuals eligible to vote in the 2012 election in Pennsylvania contributed to at least one statewide candidate, state legislative candidate, or party committees.

When examining the above figures together, we see a relatively limited role for individuals in financing state elections. While individual donors are a main source of funds (Figure 5.1), they are relatively inactive or infrequent donors that usually donate to just one or two candidates or party committees (Figure 5.2). Additionally, few eligible individuals actually donate at all in state elections (Figure 5.3). Apart from major individual donors, it seems unlikely that most individual donors have a substantial role in party networks, especially since they usually support only one candidate or party committee.\(^{51}\)

While the finding that individual donors seem to mostly be peripheral donors is important for developing criteria for network inclusion, candidates and party committees are the donors of most interest in this study. To better understand the contributing behavior of candidates, I explore the proportion of state candidates contributing to other candidates and party committees. Despite extensive research on member-to-member

\(^{51}\) To further explore the role of individual donors in state elections, I examined in depth donation patterns in Pennsylvania. In this analysis, I frequently found additional evidence that individual donors are peripheral players in state elections. For example, almost 80% of individuals contribute to one candidate or party committee, whereas candidates and party committees tend to contribute to multiple actors (see Figure 5A.1 in the appendix following the chapter).
contributions in Congressional elections (Cann 2008; Currinder 2003, 2009; Heberlig, Hetherington, and Larson 2006; Heberlig and Larson 2005, 2010, 2012; Kanthak 2007; Wilcox 1989), we know little-to-nothing about the engagement of statewide and state legislative candidates in giving donations.\(^{52}\) By the 2000 election, over 90% of members of Congress were redistributing money to fellow members, candidates, and party committees (Heberlig and Larson 2010). Due to the higher professionalism and competitiveness of Congressional elections (Abbe and Herrnson 2003), I expect a lower proportion of candidates to contribute to other candidates and party committees than the 90% of congressional incumbents.

Although I expect less than 90% of state candidates to be active contributors, I do expect the majority of candidates in state elections to give at least one contribution to other party actors. Over the past several decades, state parties have become more established organizations and are regularly active in elections in most states (Abbe and Herrnson 2003; Lynch and Rozell 2002). Stronger organizations, as well as competitive elections, should be able to provide enough incentives to motivate a substantial number of candidates to contribute scarce resources to fellow candidates and party committees (Hamm and Harmel 1993; Heberlig and Larson 2012; Schlesinger 1994; Shea 1995). The incentive of candidates to give their campaign funds to other candidates may be lower in states without competitive elections (Heberlig and Larson 2012), so I also expect fewer candidates to give donations in states with fewer competitive races (like Texas).

\(^{52}\) In my extensive searches of current research, I have not uncovered any research on candidate-to-candidate or candidate-to-party donations in state races beyond some research on self-financing (Alexander 2005; Brown 2012; Wrzenski 2012).
To assess the proportion of state candidates that are contributing to other party actors, I compare the percentage of candidates giving at least one donation and those not giving any contributions in a state election.

In Figure 5.4, we see that most candidates contribute to other candidates and state party committees. Around 80% of candidates in four states (Iowa, North Carolina, New Mexico, and Pennsylvania) transfer resources to fellow party actors. The proportion is lower in the other three states, but still about two-thirds of candidates give donations in Colorado and Oklahoma. Texas statewide and legislative candidates are less likely to contribute than candidates in other states with about 50% giving at least one donation.

Setting aside the lower percentage of candidates giving in Texas, most candidates are involved in supporting other candidates’ races and party committees. As expected, a
lower proportion of state candidates give contributions than Congressional incumbents.\footnote{Heberlig and Larson’s (2010) analysis focuses on members of Congress, not all candidates like my research. Although the difference in sample is somewhat problematic, it actually sets up a harder test for my analysis. The motivation for non-incumbents to contribute to other candidates is less than that of incumbents, so it is likely the percentage of Congressional candidates redistributing funds is lower than the percentage of members doing so.} However, a majority of statewide and state legislative candidates do contribute to other party actors in all seven states. This suggests relatively strong or active party organizations in these states that are incentivizing and encouraging candidates to contribute.

The variation in the proportion of statewide and state legislative candidates contributing to party actors presented in Figure 5.4 is also an important finding. Interestingly, the percentage of candidates donating in an election does not appear to be related to the level of competitive races in an election. Colorado, which has a high level of competitive races, has relatively low percentages (73\% in 2010 and 62\% in 2012) of candidates giving to other party actors. Meanwhile, there are a comparatively high proportion of candidates (78\% in 2010 and 74\% in 2012) donating in Pennsylvania – a state with a relatively low level of competitive races. However, the number of candidates giving donations may be related to chamber competitiveness. States with a higher proportion of candidates contributing to party actors are those with chambers up for control in recent elections. Iowa, North Carolina, New Mexico, and Pennsylvania all have had at least one competitive chamber in either the 2010 and 2012 election. On the other hand, Texas is basically a one-party state at the state level. It actually makes sense that chamber competitiveness may be a larger factor in party organization and activities than
the level of race competitiveness because majority control is what parties seek most (Aldrich 1995; Herrnson 2009; Schecter and Hedge 2001).

The regular engagement of state candidates in redistributing resources to other party actors further demonstrates the appropriateness of using the transfer of resources to study party networks. If few candidates contributed to other candidates and party committees, then measuring relationships with campaign contributing would not be useful because we would mostly be studying the lack of a party organization.

To learn more about the donating habits of candidates, I examine whether candidates contribute to other candidates, party committees, or both. Congressional members tend to contribute to both (Heberlig and Larson 2012), which indicates the importance and routine nature of candidate contributions in congressional races. The less professional nature of state parties and elections may not motivate state candidates to contribute to the party coalition. Instead, state candidates may tend to donate mainly to other candidates that are friends or allies. To explore this possibility, I plot the percentage of statewide and legislative candidates contributing to candidates, party committees, and both in Figure 5.5.
In Figure 5.5, we see that the type of actors receiving donations from state candidates differs extensively across these seven states. Interestingly, few candidates donate to only party committees. In several states, particularly those with higher levels of candidates contributing to other party actors, most candidates donate to both candidates and party committees (Iowa, North Carolina, Pennsylvania). It seems likely that these states have stronger party organizations than the other states that encourage or incentivize candidates to contribute to both party committees and other candidates to advance party goals (Heberlig and Larson 2012). Surprisingly, in the states with lower proportions of candidates contributing (Oklahoma and Texas 2012), candidates largely give to only other candidates. A possible reason for this pattern is that party incentives are low and these candidates are mainly donating to friends, not donating for strategic, partisan purposes. However, in order to examine these possibilities, I need to ensure I am using
the most appropriate measurement of state party networks. Decisions regarding actors to include and relationships to exclude can impact results (Bernard et al. 1990; Marsden 1990; J. Scott and Carrington 2011), making it especially important to understand the consequences of the criteria used to create networks. In the next section, I evaluate the use of different criteria for creating state party networks to determine the most appropriate measurement.

Creating Party Networks

Deciding on the sample to include in network analysis is difficult. For research that studies a legislature, the entire sample of legislators is easy to include. However, it is difficult to analyze meaningful party relationships when working with campaign networks that can include up to 40,000 actors and 60,000 connections54. To do so, we must remove less relevant actors. When making decisions regarding which actors to keep, we want to be careful not to force a structure on the network.

In coalition definitions of parties, party organizations include formal party committees, officeholders and candidates, allied groups, and individual supporters (Herrnson 2009; Schlesinger 1994; Schwartz 1990). All the networks that I create include candidates and party committees since they are the actors most key to understanding the organization of state parties. However, selecting which other actors to include is more challenging.

To determine the most appropriate measurement to use in my analysis, I compare the size and composition of networks using different criteria. Due to the trivial

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54 The largest network, the full Colorado 2010 Democratic contribution network, includes 42,546 actors and 63,572 connections.
participation of individual donors and most interest groups in state elections (see Figure 5.2), I expect networks with individual donors and small group donors to be large but sparsely connected. I expect networks with only party-relevant actors (e.g., party committees, candidates, and allied interest groups) to be more connected, meaning that the ratio of connections to actors should increase. If both these expectations are true, then we can accept that many individual and group donors are minor players in elections and focus on actors relevant to party organizations.

For all network configurations, I include all donations from party committees and candidates. I use six criteria for creating networks to remove individual and group donors that may be peripheral players: full network, large donations and donors, relevant actors only, major groups only, ally only, and party only. These criteria build on each other. For example, the actors removed with the large donations and donors criterion are also deleted in the following four criteria: relevant actors only, major groups only, ally only, and party only.

The first network configuration is the full network (Network 1 in Figure 5.6). Full networks include all contributions given in an election to state candidates and party committees. All individual, group, candidate, and party committee donors are included. These networks are not directly comparable across states due to differences in reporting thresholds, but full networks are useful for understanding the number of all actors and connections (i.e., donations) in a state election.

The large donations and donors criterion removes small contributions (i.e., under $100) and small donors (i.e., actors giving less than $250 total in an election). Remember, this criterion only applies to individual and group donors. Regardless of the
contribution amount, all party committees and candidates remain in the *large donations/donors* networks (Network 2 in Figure 5.6). I remove small individual and group donations and donors due to differences in the reporting requirements across states. Most states in the sample have a low threshold for reporting information on donations. For example, any donation $20 or larger must be reported in Colorado. However, unless the donor gives $250 in aggregate, donations under $100 may remain anonymous in New Mexico. Therefore, I remove from Network 2 these small individual and group donations and donors to maintain comparability across states.

The *relevant actors only* networks (Network 3 in Figure 5.6) include only major donors, candidates, and party committees. In addition to deleting small donations and donors, the *relevant actors only* criterion removes individual and group donors giving fewer than 3 contributions in an election. If an individual or group only connects to one or two actors, even if they give a large amount, they will struggle to play a substantive role in the party network. *Relevant actors only* networks (Network 3), therefore, include major individual and interest group donors giving at least three contributions, party committees, and candidates.

The *major groups only* criterion (Network 4 in Figure 5.6) removes all non-candidate individual contributors, as well as small group donors and donations. Previous research on party campaign networks often removes individual donors from the network to focus more directly on the party coalition (Grossmann and Dominguez 2009; Herrnson and Kirkland 2013; Skinner et al. 2012). Thus, *major groups only* networks (i.e., Network 4) contain only major interest group donors, candidates, and party committees.
In the *ally only* network (Network 5 in Figure 5.6), only groups that give multiple, large donations to one party remain in the network along with candidates and party committees. This restriction removes interest groups that contribute to both parties along with all individual donors. In this case, the goals of allied groups correspond to that of the party. Groups that support both parties (i.e., non-aligned groups) often pursue economic interests that benefit the group, such as friendlier tax policies or regulations, rather than ideological goals (Bonica 2013; Fellowes and Wolf 2004; Herrnson and Curtis 2011). Therefore, these groups are less likely to play a key role in party organizations beyond providing funds (Herrnson and Kirkland 2013; Herrnson 2009) and are removed from *ally only networks* (Network 5).

Finally, the *party only* networks (Network 6 in Figure 5.6) have only candidates and party committees, which are the core actors in party organizations (Heberlig and Larson 2012; Herrnson 2009). The *party only* criterion removes all individual and group donors. Therefore, *party only* networks (Network 6) will have much fewer actors than the previous networks that include at least a few other donors. However, I expect these networks to have a larger ratio of actors to connections since these actors are active in contributing to one another (see Figures 5.2 and 5.5).

In an effort to better illustrate these concepts, I list the donors included in each network in Figure 5.6. The circle size in Figure 5.6 corresponds the number of actors included in the network type. For example, the largest circle – Network 1: *Full Network*,

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55 The inclusion of party ally is one key benefit for using social network analysis to measure party organizations over other methods (Herrnson 2009; Noel 2010). For more information on party ally, please see Chapter 3.
includes the maximum number of actors. Membership in the most restrictive criterion, the party only criterion, contains the fewest number of donors.

**Figure 5.6: Donor Composition by Network Criteria**

- **6: Party Only**
  - Party committees & candidates

- **5: Ally Only**
  - Major allied group donors giving at least 3 donations, party committees, & candidates

- **4: Major Groups Only**
  - Major group donors giving at least 3 donations, party committees, & candidates

- **3: Relevant Actors Only**
  - Major individual & group donors giving at least 3 donations, party committees, & candidates

- **2: Large Donations/Donors**
  - Major individual & group donors, party committees, & candidates

- **1: Full Network**
  - All donors to state candidates & party committees

To understand the impact of these network criteria, I analyze differences in the size of networks by graphing the number of actors and connections included in each
network configuration.\textsuperscript{56} Figure 5.7 plots the number of actors and connections (i.e., donations between actors) included in 2010 party networks when using the three more lenient criteria (full network, large donations/donors, relevant actors only). Figure 5.8 plots the same for networks created with stricter criteria (major groups only, ally only, party only).\textsuperscript{57} The bar labels display the ratio of connections to actors in each network. If the ratio is low, then most actors in the network connect to (i.e., donate to) one or two other actors. If the ratio is high, then most actors connect to numerous other actors. I expect substantial differences across states and parties in this ratio since there are significant variations in the composition of state donor pools.

\textsuperscript{56} The full Colorado data also includes contributions to local party committees and PACs. To ensure comparability across states, the Colorado networks in Figure 5.7 and 5.8 only include contributions to state party committees and state candidates like the five NIMSP states.

\textsuperscript{57} As discussed in Chapter 3, Texas is not included in this analysis due to the lack of comparable data for networks larger than the party only networks.
Although the general size of the networks differs, the number of connections per actor in the party networks is remarkably similar across party and state. For example, the ratio of connections to actors in full networks is around 1.5 in every state party. Additionally, the ratio is around 2 for all large donations/donors networks apart from the Iowa Democratic organization, which has the highest ratio of connections per actor (i.e., higher connectedness) in all three networks. This general similarity is rather surprising since I expected the composition of actors and relationships to vary more substantially across states.

As the criteria become stricter and removes more individual and group donors, the number of actors and connections in the network decreases dramatically. Meanwhile, as

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58 This is also true for the 2012 election. I discuss only the 2010 results in the text for brevity. Appendix Figure 5A.2 plots the number of actors and connections by less strict
I remove small donations/donors and infrequent donors, the ratio of the number of connections (i.e., donations) to one actor increases in all six states. For example, in Pennsylvania, there are about 1.5 donations per actor in the full networks and around 5.5 donations per actor in the relevant actors only networks. In the preceding analysis on state donor pools, individuals tended to be less active players that give only one or two donations. Therefore, this finding that campaign networks become denser when removing individual donors matches our general expectation that they are mostly marginal actors in state campaign networks.

However, not all state networks become substantively denser when removing less engaged donors. For Colorado parties, the ratio of connections to actors is barely larger in the relevant actors only network than the larger, more inclusive networks. Due to the higher competition in Colorado than the other states and the heightened incentives to redistribute funds, we might expect Colorado party networks to be fairly well connected. Thus, it is rather surprising that the Colorado networks appear to be the least connected. From Figure 5.7, it seems that even active and major donors in Colorado elections tend to contribute to just a few candidates, resulting in this relatively low number of connections per actor. This might be due to a variety of factors, including a growing use of independent spending by interest groups and party-allied groups in Colorado (Hamm et al. 2014; Parkinson 2011), which is not included in this research. Before examining the cause of this finding in great depth, it is important to see whether Colorado tends to be an outlier in networks created with the stricter criteria for inclusion.

network criteria for the 2012 election. The ratio of connections to actors tends to be higher in the 2012 election than 2010, especially in the relevant actors only networks. However, the general patterns for 2012 match those of the 2010 election in Figure 5.7.
The *large donations/donors* and the *relevant actors only* criteria remove a good portion of donors. However, these still include more actors than the usual composition of party networks, which remove all individual donors and often non-aligned groups (Desmarais et al. 2014; Herrnson and Kirkland 2013; Skinner et al. 2012). I compare networks created with the three stricter criteria (*major groups only, ally only, and party only*) in Figure 5.8 in order to compare the more standard network configurations in previous research.

The networks included in Figure 5.8 are much smaller than those created with the less strict criteria in Figure 5.7, most containing thousands fewer actors. As in Figure 5.7, the number of actors and connections in the networks decreases as the criteria for inclusion becomes stricter. The drop in the number of actors and connections is especially large between the *major groups only* network and the *ally only* networks in most states.
(not Colorado), which removes all individuals and non-aligned groups. After dropping all actors but the formal party committees and candidates, the *party only* networks are quite small compared to the other five configurations.

Although the *ally only* and *party only* networks are relatively small, the size of networks varies across states. Pennsylvania party networks include more actors and connections than the other states. While this was not as noticeable with more lenient criteria, the larger size of Pennsylvania party networks is clear when using more strict criteria. The large size of the Pennsylvania legislature\(^{59}\) and the greater role of groups in Pennsylvania elections\(^{60}\) may account for the larger size of Pennsylvania networks.

In Figure 5.8, ratio of connections to actors drops as the criteria for inclusion become stricter, which is surprising difference from the larger networks in Figure 5.7. In most states, removing non-aligned interest group donors with the *ally only* criterion results in noticeably less connected networks (i.e., lower number of connections per actor). Clearly, major interest group donors are key funders and connectors of actors in state elections. The drop in the number of connections per actor is especially large in Oklahoma. This suggests that donations from groups serve as key connectors for state candidates and party committees. Thus, party actors in Oklahoma appear to be reliant on group donors for funding and connecting them rather than having a strong and highly connected party organization.

\(^{59}\) Together, the Pennsylvania General Assembly and Senate have 253 members. The next largest state (in this sample) is North Carolina with 170 total legislators, which is almost 100 members smaller than Pennsylvania. The sheer number of candidates in Pennsylvania legislative races is most likely the reason for the larger size of the Pennsylvania party networks.

\(^{60}\) See Figures 5.1 and 5.2.
Several state *ally only* and *party only* networks have higher ratios of connections to actors than the other states. The Colorado, Iowa, and New Mexico Democratic networks have more connections per actor than other state parties. Competition is higher in these states, so this finding supports my expectation that party networks will be more connected in states with higher competition. Using other measures, I examine whether these state party networks are denser and more developed than the other parties.

The *party only* networks, which contain only candidates and party committees, have the smallest ratio of connections to actors in Figure 5.8. This is unanticipated because we expect the core party actors to be more densely connected than the less central actors. Instead, it appears as though groups that are major donors have an important role in connecting party actors. This result indicates that party networks may still be loosely connected in general. Throughout the rest of this chapter, I use other measures of network connectedness to further explore this possibility.

In Figure 5.7, Colorado is an outlier with substantively less connected networks than the other states. However, when looking at Figure 5.8, it is less clear that Colorado party networks are significantly different than other state parties. The ratio of connections to actors in Colorado’s *major groups only* networks is slightly smaller than other state party networks. On the other hand, Colorado *ally only* networks have a somewhat larger ratio than most states. Finally, the connectedness of the Colorado *party only* networks appears to be very similar to other states. Therefore, differences in the Colorado networks appear less substantial using stricter criteria.

In the previous figures, I use the ratio of connections to actors to evaluate the connectedness of networks. While this measure provides a good initial assessment of
network density, it assumes that all actors have the same number of connections. Therefore, to more deeply explore the impact of these criteria on the structure of the networks created, I compare the average number of connections in each network. Although similar in nature to the ratio of connections to actors measure, calculating the average number of connections accounts for variations in the number of ties or connections that actors have in the network. For example, in some of these party networks, most actors have only one or two connections and a few actors have numerous connections (e.g., over 50 connections). By also using the average number of connections, I can appraise the connectedness of a network more directly.

The number of connections, known as degree in social network analysis, is the number of direct ties an actor has to other actors. The more connections an actor has to other actors, the more access and influence the actor has in the network (Wasserman and Faust 1994). The average number of connections, or average degree, is the average number of relationships that all actors have in the network. If most actors in a network are connected to only one or two other actors, then the average number of connections will be low. On the other hand, a network with more highly connected actors will have a higher average number of connections. Figure 5.9 plots the average number of connections by state and party for the six different networks.
Figure 5.9: Average Number of Connections by Network Creation Criteria in 2010 and 2012 Elections*

*All networks include candidates and party committees
In Figure 5.9, we see that the average number of connections (i.e., average degree) varies across the networks. The average number of connections is smallest in the full network and large donations/donors networks. These networks include many individuals and groups that give only a few, small donations. Therefore, we would expect these large networks to have a low average number of connections. Removing most individuals in the relevant actors only and all individuals in the major groups only networks increases the average number of connections in every state. This finding provides additional support for my earlier conclusion that individuals are mostly marginal actors in campaign and party networks.

If strong party networks are active in these states, then we expect a high average number of connections in the ally only and party only networks. However, there is actually a considerable drop in the average number of connections from the major groups only networks to the ally only and party only networks, especially in Oklahoma and Pennsylvania. For example, the average number of connections for the 2010 Republican Party in Oklahoma drops from 20.7 in the major groups only network to 6 in the ally only network. This suggests that non-aligned interest groups are highly connected in party networks because removing them decreases the average number of connections and results in a less-connected network. Therefore, these non-aligned groups account for a substantial amount of the connections or interactions among many party actors, not party committees and candidates. This provides some credence to the decision of recent expanded party network (EPN) studies to keep non-aligned groups in the party network (Desmarais et al. 2014; Herrnson and Kirkland 2013).
Figure 5.9 also compares the average number of connections for the six network configurations by election. Interestingly, there are few differences across elections. Apart from the Iowa *relevant actors only* and *ally only* networks and the North Carolina *relevant actors only* networks, the difference in the average number of connections in the 2010 and 2012 networks is never greater than four. The almost complete lack of major differences across elections allows me to focus more directly on one election throughout the rest of this chapter.

The preceding analysis demonstrates that the specific criteria used to create networks have important implications for the actual structure of networks. Including or removing particular actors substantively impacts the level of connectedness. Individual donors play largely peripheral roles in party networks and rarely connect to (i.e., donate to) more than one or two actors. Removing these donors from the networks has only a minor impact on network connectedness. Non-aligned interest groups, on the other hand, are important actors in some state networks that help connect party actors, especially in Oklahoma. However, these non-aligned groups, which donate to actors in both political parties, rarely share the same goals as the party coalition. Instead, they donate in an attempt to gain access or group-specific benefits (Bonica 2013; Fellowes and Wolf 2004; Herrnson and Curtis 2011). Therefore, most of the following analysis focuses on *ally only* and *party only* networks in an attempt to better understand the structure of party networks in state elections.

**Comparing Full Contributions vs. NIMSP Data.** Before moving on to study *ally only* and *party only* networks in more depth, it is important to determine how using different data
sources may impact the composition or structure of party networks. The full contribution data for Colorado and Texas includes all donations given in an election. The contribution data from the National Institute on Money in State Politics (NIMSP) does not include donations to PACs or donations to local party committees. If candidates and state party committees donate regularly to these local parties, then we may underestimate the connectedness and density of party networks with NIMSP data.

To better understand how using NIMSP data impacts party network structure, I compare Colorado networks created with full contribution data from the Secretary of State with Colorado networks created using restrictions to match the data from NIMSP.61 I created Colorado networks that match the other NIMSP states by deleting contributions to (i.e., connections to) PACs and local party committees. I plot the number of actors by network criteria and data type (full data vs. NIMSP data) in Figure 5.10.

In Figure 5.10, I remove the full network entries in an effort to better compare the smaller networks. The full Colorado data does include about ten thousand more actors for both Democrats and Republicans. The full networks are the least appropriate for testing my hypotheses since they include many actors that have little impact or role in the party. Thus, I focus on the smaller and more relevant networks in Figure 5.10.

61 Ideally, I would also include Texas in this comparison. However, the lack of full network data due to consistency issues in the Texas data makes that beyond the scope of this project.
The differences in the number of actors and ratio of connections to actors in the full Colorado data and the NIMSP setup are relatively minor. In the full data, there are about 10,000 more actors in the large donations/donors than in the NIMSP data. This is due to the inclusion of actors that donate to interest groups or local party committees, but not to candidates or state/legislative party committees.

However, even though there is a large difference in the number of actors in the large donations/donors, the connectedness is very similar. In both Democratic and Republican large donations/donors networks, there is only a 0.1 difference in the ratio of connections to actors for the full data and NIMSP data. For example, there are 1.3 connections per actor in the NIMSP Democratic large donations/donors network and 1.4 connections per actor in the full data. Therefore, although the large donations/donors network contains many more actors in the full data, the substantive differences between
them are minor. This is probably due to the inclusion of donors to interest groups; thereby, increasing the number of actors but not really the connectedness.

Apart from the *large donations/donors* networks, the number of actors in the full data and NIMSP data are similar. At most, there are several hundred more actors in the full data. Additionally, the ratio of connections to actors is very similar for the *relevant actors only*, *major groups only*, *ally only*, and *party only* networks. The biggest difference in ratios is the difference of 0.4 between the number of connections per actor in the full and NIMSP Democratic *relevant only* network. Otherwise, there are minimal, or no, disparities in the ratio of connections to actors in the Colorado full and NIMSP networks.

From Figure 5.10, it appears that using NIMSP data to study political parties will not result in a major misrepresentation of their network structure. Like the preceding analysis of six states, I further evaluate network connectedness using the average number of connections. By calculating the average number of connections (i.e., average degree), I can better assess the connectedness of networks that differ in the variance of the number of actors’ connections. Therefore, in Figure 5.11, I plot the average number of connections (i.e., average degree) for the full Colorado networks and the Colorado networks created with the NISMP restrictions.
Again, the differences between the full Colorado contribution data and the NIMSP data are minor. Whether the average number of connections is larger in the full Colorado data or the NIMSP data tends to fluctuate, but the difference is never larger than 1 or 2 connections. Moreover, the difference is statistically insignificant for each network configuration. While we do lose some actors and connections by using the NIMSP data, the substantive impact on the networks seems minor. Although using the NIMSP data over the full data may not be a good decision for some states, these findings provides us with a greater level of confidence in using the NIMSP data to study party networks.

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I tested whether the difference in the average number of connections between data types was statistically significant using two-tailed t-tests.
Now that I have determined that several network types are appropriate to use when studying political parties (ally only, party only) and demonstrated that the NIMSP data does not significantly affect the structure and composition of state party networks, I proceed by graphing the state party networks.

**Visualizing State Party Networks**

An advantage of social network analysis is the ability to create network graphs that illustrate the structure of relationships or ties in a group or organization. These graphs are useful for visualizing connections, which I measure with transfers of campaign resources among actors in state elections. In these graphs, it is the pattern of connections or ties that are of importance to researchers (J. Scott 2000). It is useful to examine these network graphs first because they help provide insights into similarities and differences across state parties.

I use state political factors in Table 5.1 to develop some general expectations about state party networks. These state political factors include chamber competition, electoral competition, and the influence of money. Higher electoral or chamber competition suggests that each party has a real opportunity to win a majority of seats. A major goal of party actors is majority status because it brings more party and personal power, including more policy success and fundraising advantages (Cox and Magar 1999; Herrnson 2009; Rohde 1991; Schlesinger 1994). Therefore, competition increases the incentives for party actors to redistribute their resources to others. If competitive elections or chambers do motivate actors to help support the party, then I expect states with more competition to have more developed or connected party networks.
Additionally, the influence of money in state politics may impact the structure of party networks. As the influence of money grows in state legislatures, legislators demand more fundraising and resources from party committees and leaders (Currinder 2009; Powell 2012). Due to this demand, it is likely that party actors will redistribute more money in general to other actors, resulting in a more connected party network.

In summary, I expect party networks to be more connected and denser in the following states with high levels of chamber or electoral competition and money has a high level of influence in the legislature: Colorado, Iowa. Additionally, I test whether party networks are less connected and sparser in Oklahoma and Texas, which have low levels of competition and a low influence of money in the legislature. Finally, New Mexico, North Carolina and Pennsylvania, which have either a moderate level or a mix of these factors, will likely have party networks with a moderate level of connectedness.

### Table 5.1: State Political Factors

<table>
<thead>
<tr>
<th>State</th>
<th>Level of Chamber Competition</th>
<th>Level of Electoral Competition</th>
<th>Influence of Money</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Upper: High</td>
<td>High</td>
<td>High-to-moderate</td>
</tr>
<tr>
<td></td>
<td>Lower: High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>Upper: High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Lower: Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>Upper: Moderate</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Lower: High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td>Upper: Moderate</td>
<td>Moderate</td>
<td>High-to-moderate</td>
</tr>
<tr>
<td></td>
<td>Lower: Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Upper: Low</td>
<td>Moderate</td>
<td>Moderate-to-low</td>
</tr>
<tr>
<td></td>
<td>Lower: Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Upper: Moderate</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Lower: Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td>Upper: Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Lower: Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1From NCSL (2012)  
2From Hamm and Moncrief (2012)  
3Created from Powell (2012)
To test these expectations, I examine the party network graphs for Colorado, Iowa, New Mexico, North Carolina, Oklahoma, and Pennsylvania. Of these states, only North Carolina had a gubernatorial election in 2012. I do not find major differences in the state donor pools across elections, but it is possible that candidates for governor and their funders will be more central in the network in gubernatorial elections. Therefore, concentrating on networks in the 2012 election will hopefully focus more on the legislative network.

In this analysis, I include and discuss graphs of the ally only networks. Ally only networks include allied interest groups, formal party committees, and candidates. These are the actors most relevant and key to the party coalition (Herrnson 2009). Groups that contribute to both parties do not tend to share party goals. Therefore, including all major group donors may change the structure of the network. However, including allied groups is important because these groups are significant actors in party networks (Herrnson 2009; Skinner et al. 2012). Therefore, ally only networks are more appropriate than party only networks for this section.

As I will discuss further throughout the rest of the chapter, the general structure of the state parties are surprisingly similar. The variation across these states provides an

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63 I exclude Texas in this analysis due to concerns about the comparability of the Texas ally only networks.
64 Throughout the other analysis in this chapter, the differences in networks across election years appear relatively minor. I only present and discuss the full campaign networks for 2012 in an effort to streamline this analysis. I include the equivalent 2010 network graphs in the chapter appendix (Figures 5A.5-5A.16).
65 A key validity check for research on party networks is whether there is a clear separation of the Democratic and Republican networks in the full networks. Due to space and time concerns, I do not present full campaign network graphs. However, for all six states, there is a clear division of the two parties in the full graphs.
opportunity to start exploring how electoral context and the influence of money may impact network structure.

**Ally Only Networks.** Graphing state party organizations individually provides a clearer look at the structure of their networks. I graph the following *ally only* networks with the Fruchterman-Reingold Algorithm. This algorithm is useful for plotting large networks because it is efficient and plots topologically close actors near another (Bruggeman 2009; Fruchterman and Reingold 1991; Krempel 2011). Actors that do not share any close connections are graphed in different areas of the network. For example, candidates and party committees that are farther apart in the network may have different donors, which pull them apart visually. The Fruchterman-Reingold Algorithm is appropriate for graphing party networks since the layout is intuitive and illustrates the positions of actors in the party network. In these network graphs, the physical length of lines between nodes does not contain useful information. Lines simply symbolize the presence of a connection or relationship between two actors (J. Scott 2000).

In an effort to test my expectations regarding competition, the influence of money and network structure, I examine several features in the *ally only* network graphs. First, do actors from the other political party appear in the party network? Due to the high elite polarization in most states (Shor and McCarty 2011), I expect few Republican actors will be in the Democratic *ally only* networks and vice versa.

Another factor to consider when observing these figures is the number of actors only connected to themselves. These actors are self-financing and are separate from the party network. If a network contains many of these isolated candidates, then the
incentives to cooperate and donate to the party in elections are probably low – a possible sign of a weak party organization.

Thirdly, do actors tend to bunch or gather together in party networks? Actors, especially those sharing characteristics like gender and race, tend to group together, creating clusters of actors within networks (Kadushin 2012; McPherson et al. 2001). Clustering happens in most social networks (Burt 2005; Kadushin 2012; McPherson et al. 2001), making it likely that party actors will also cluster within the broader party coalition. If actors do cluster extensively within party networks, it may impact party cooperation by stunting or discouraging the reallocation of resources among actors.

Finally, I explore whether allied groups, candidates, or party committees tend to be the central actors in the party network. If few candidates play a central role in the party network, then candidates may not be active in redistributing funds to other party actors. Instead, allied groups or party committees may be more central through their donations to candidates, resulting in a more peripheral role for candidates in the party network. While this does not measure strength of parties, it does provide some insight into the basic structure or organization of party actors.

As discussed above, for this analysis, I graph and discuss ally only networks for the 2012 Colorado, New Mexico, Iowa, North Carolina, Pennsylvania and Oklahoma parties (Figures 5.12 – 5.23). These party network graphs are included on pages 157-162. I organize these state party networks by the level of chamber competition in each

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66 For this analysis, I create the Colorado networks with the additional restrictions to be equivalent and comparable with the other states created with NIMSP data.

67 The equivalent graphs for the ally only networks in the 2010 election are included in the chapter appendix (Figures 5A.5-5A.16).
state. By presenting these figures from high chamber competition to low chamber competition, I can better assess how competition may impact party network structure.

Additionally, I organize these *ally only* network graphs by majority status. Party actors with majority status have fundraising and resources advantages (Cox and Magar 1999; Schlesinger 1994), which they may use to incentivize actors to cooperate with the party. Consequently, parties in the majority may have more connected parties. I believe that comparing across majority and minority status is more relevant than comparing parties within a state, especially since parties often base their campaign strategy on their majority status (Stonecash and Keith 1996; Stonecash 1988). Therefore, I order the *ally only* graphs by state according to the level of chamber competition (starting with high competition) and then by party majority status (starting with majority parties). I start with the Colorado Democratic *ally only* network in Figure 5.12 and end with the Oklahoma Democratic *ally only* network in Figure 5.23.
Figure 5.12: 2012 Colorado Democratic Party Coalition with Ally Groups Only*

*Created with NIMSP Restrictions

Figure 5.13: 2012 New Mexico Democratic Party Coalition with Ally Groups Only
Figure 5.14: 2012 Iowa Democratic Party Coalition with Ally Groups Only

Figure 5.15: 2012 North Carolina Republican Party Coalition with Ally Groups Only
Figure 5.16: 2012 Pennsylvania Republican Party Coalition with Ally Groups Only

Figure 5.17: 2012 Oklahoma Republican Party Coalition with Ally Groups Only
Figure 5.18: 2012 Colorado Republican Party Coalition with Ally Groups Only*

*Created with NIMSP Restrictions

Figure 5.19: 2012 New Mexico Republican Party Coalition with Ally Groups Only

*Created with NIMSP Restrictions
Figure 5.20: 2012 Iowa Republican Party Coalition with Ally Groups Only

Figure 5.21: 2012 North Carolina Democratic Party Coalition with Ally Groups Only
Figure 5.22: 2012 Pennsylvania Democratic Party Coalition with Ally Groups Only

Figure 5.23: 2012 Oklahoma Democratic Party Coalition with Ally Groups Only
We can evaluate differences in the structure of ally only networks through the number of isolated actors, clustering, the role of candidates, and the presence of actors from the other party in the party network. In these networks, isolates tend to be self-financing candidates without connections to any other party actors. For the most part, there are relatively few isolates in these graphs. This is especially true in the ally only networks in states with at least one competitive chamber. For both majority and minority parties in Colorado, New Mexico, and Iowa networks have fewer than ten isolated actors.

However, in the states with moderate or low competition and a moderate influence of money (Oklahoma, North Carolina), there are more than 30 isolated candidates in the majority party (Republican) networks. Additionally, Oklahoma has a relatively low proportion of candidates giving at least one donation (Figure 5.4). Though most candidates are part of the party network in these states, a substantial number of candidates are isolates and separate from the party network in North Carolina and Oklahoma – particularly Republican candidates. Pennsylvania ally only networks have fewer isolated actors than the Oklahoma and North Carolina networks, which perhaps relates to the higher influence of money in Pennsylvania. These findings regarding isolated actors provides some initial evidence that networks in states with competitive elections are more connected.

The role of candidates also appears to vary across these states. Candidates are plainly the central actors in the New Mexico, Iowa, North Carolina, and Pennsylvania ally only networks. In these networks, candidates are in the middle with most allied groups and party committees on the perimeter of the network. If parties are organized as parties in service to candidates as Aldrich (2005) hypothesizes, then we would expect
candidates to be the central actors in a network apart, perhaps from the state party and legislative campaign committees.\textsuperscript{68}

Colorado and Oklahoma parties, on the other hand, do not have a similar structure. Instead, it is rather difficult to determine which actors are the central actors. Actors in the Colorado \textit{ally only} networks are rather mixed with no clear pattern in their connections beyond a clustering of most party committees on the periphery. In the sparser Oklahoma \textit{ally only} networks, the loose connections between candidates and party committees do not appear to have any particular organization. If anything, candidates seem clustered around groups or party committees in the Oklahoma party networks. The smaller proportion of candidates involved in donating to other candidates in Oklahoma may be contributing to this difference in organization.

The central role, or lack of a central role, of candidates in these \textit{ally only} networks does not confirm our expectations that party networks in competitive states will be more connected. However, it does tell us important information about these networks. First, candidates are active donors and recipients in most state networks. In Colorado and Oklahoma, candidates are less clearly the central actors. The proportion of candidates contributing to other candidates and party committees is also lower in these two states (see Figure 5.4), which might be a contributing factor for the differences in the role of candidates. Additionally, Colorado and Oklahoma are the only two states in the sample with term limits. Term limits might discourage candidates from contributing to one another, resulting in a less-central role of candidates in these \textit{ally only} network graphs.

\textsuperscript{68} These party committees are major donors to state candidates, so they should be some of the most central actors in the party network. I explore this expectation later in the chapter.
I do not expect actors to cross party lines and be in the other party’s networks due to the high elite partisan polarization in state politics (Shor and McCarty 2011). In these figures, however, we see that members of the other major party do appear in these party networks. While there are rarely more than ten members of the opposing party in a party network, their presence is surprising. These actors with dual-membership are never central in the opposing party’s network. Instead, they are always on the periphery. Therefore, it is possible that these actors are pursuing individualistic goals when allocating funds, resulting in them giving to friends or ally in the opposing party as well as actors in their own party.

A clustering of actors is common in most social networks. In previous research, scholars have found ideological clustering in party networks in national elections (Koger et al. 2010). Nonetheless, there are few clear clusters in these ally only networks. In most states, especially Colorado, Iowa and North Carolina, we see at least one large cluster of mostly formal party committees. These well-defined clusters of party committees are usually on the border of the networks. However, this clustering may be due to these local party committees only contributing to candidates and state party committees and not receiving donations – not because they only have ties to each other.

Apart from grouping of party committees on the periphery, there does not appear to be much clustering in ally only networks. The Colorado Republican network does include a second cluster containing some candidates. Additionally, the Oklahoma Democratic network may contain some clustering. Beyond these states and the party

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69 North Carolina Republican ally only network is an outlier with 11 Democrats present.
70 Due to the structure of the NIMSP data, donations to these local party committees are not included in the networks.
committee clusters, it is difficult to identify clusters in these ally only networks. It is possible that the allied groups help connect party actors. Alternatively, these graphs may not be the best perspective or level for recognizing clusters.

From these network graphs, it is clear that several party networks are different from the others. The New Mexico Republican (the minority party) and both Oklahoma ally only networks are different. The New Mexico Republican and Oklahoma parties appear to be sparser, less connected, and smaller than the other parties. In La Raja’s (2003, 2008) research, Oklahoma parties were moderately weak organizations compared to other state parties. Perhaps a lack of chamber competition or the presence of term limits is decreasing the incentive for candidates and party committees to cooperate and develop strong or institutionalized party organizations. In the following sections, I use network statistics to further analyze the strength of party networks to confirm that Oklahoma parties are weaker than other state parties.

We can also compare party networks within states with Figures 5.12-5.23. Surprisingly, in these ally only network plots, we see a good deal of similarity in the Democratic and Republican Party networks, especially in Iowa and Pennsylvania. It is possible electoral and chamber competition has driven both parties to have similarly active organizations and a similar level of incentives for candidates to support the party, resulting in similar party networks.

There are some disparities between the Colorado, New Mexico, and Oklahoma Democratic and Republican party networks. The Colorado Democratic, New Mexico Democratic, and Oklahoma Republican networks (all majority parties) seem to have more structure and connections than the opposing party, which are all in the minority. This
suggests that parties in the minority may struggle to develop or maintain a well-connected and active party network.

Although we can learn much about state parties by analyzing network graphs, we must be cautious in making firm conclusions from these figures. To confirm the observations I have made about the network graphs, I calculate and examine several statistics and measurements of network connectedness.

**Network-Level Analysis**

To further evaluate my expectations regarding network structure, competition and the influence of money, I analyze network measures of connectedness and structural holes. Due to the small sample size of party networks included in this study, using statistical models to evaluate these measures is difficult. Therefore, this section is relatively descriptive in approach.

**Network Connectedness.** 71 I compare several measures of connectedness to better understand party network structure. These statistics, like degree, help us understand the integration of and connections in a network (Hanneman and Riddle 2005). I use four measures of connectedness to examine the strength and activity of party networks (Tables 5.2 and 5.3). 72

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71 The Chapter 3 Appendix includes the equations used to calculate these measures of network connectedness.

72 I use directed graphs to calculate these measures. Directional relationships, which indicate whether the tie is symmetric or one-sided, better capture the connectedness of actors.
The first measure is a familiar one - the average of number of connections an actor has to other actors in the network (average degree). A larger average degree indicates a more connected network. Therefore, I expect a larger average number of connections in states with higher competition and a higher level of influence of money (Colorado, Iowa).

Transitivity, the second statistic, measures the extent to which actors and their neighbors form a small world, which is a tightly connected cluster or group. Scholars also refer to transitivity as the clustering coefficient. A small transitivity value suggests a hierarchical network structure with several highly connected actors linking many actors with few connections, indicating a general lack of small worlds. Therefore, I expect larger transitivity values, or more small worlds, in states with more competitive elections.

The third measure of connectedness that I examine is density. Graph density assesses the complexity or connectedness of a network by calculating the proportion of all possible relationships that are present in the network. Small density values indicate a sparse network with a small number of all possible ties actually present. Networks with larger density values are well connected (i.e., dense). I expect state party networks in states with higher competition and a higher influence of money will be denser (Colorado, New Mexico, Iowa) than the other states (North Carolina, Oklahoma).

Finally, I use reciprocity to evaluate the cohesion of party networks. Reciprocity measures the extent to which relationships are reciprocal (i.e., mutual). A network with a high reciprocity score is more cohesive and connected. This statistic is an especially appropriate measure for understanding the connectedness of party networks since we are studying the cooperation of party actors through the transferring of resources. High
reciprocity suggests a high level of cooperation among party actors and a strong party organization. Therefore, I expect higher reciprocity in states with competitive elections and money is very influential in the legislature.

In the tables containing these measures of connectedness (Table 5.2-5.3), I also include the number of actors. The number of actors is one measure of network size. For the most part, there are not large variances in the number of actors in these party networks. However, it is important to remember the different sizes of these party networks as we evaluate these network-level statistics.

For this analysis, I present and compare these measures for the *ally only* and *party only* networks. As I discussed previously, these are the two network configurations most appropriate for examining my research questions about party cooperation and organization. For brevity, I include and discuss only the network measures for the 2012 election. The network measures for the 2010 election are included in the chapter appendix (Tables 5A.1-5A.2).

Table 5.2 includes the connectedness measures of *ally only* networks in the 2012 election. The connectedness measures for *party only* networks appear in Table 5.3. I include Texas in Table 5.3. As discussed in Chapter 3, consistency issues in the Texas data prevent me from creating comparable *ally only* networks for the state. However, I do have comparable Texas *party only* networks, so I include Texas in the following *party only* analyses. Like the network graphs, I order the states by their level of chamber competitiveness in Tables 5.2 and 5.3.

We can make several conclusions by comparing these two tables. First, the average degree is higher in every *ally only* network than the equivalent *party only*
network. Removing allied groups decreases the number of connections present in a network. This suggests that allied interest groups have connections to multiple actors in party networks, making them key actors in state party networks and important for the organization of and the allocation of funds in party networks.

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Avg. Degree</th>
<th>Transitivity</th>
<th>Density</th>
<th>Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Democrat</td>
<td>246</td>
<td>13.7</td>
<td>0.222</td>
<td>0.0261</td>
<td>0.1059</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>344</td>
<td>6.9</td>
<td>0.067</td>
<td>0.0101</td>
<td>0.065</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>277</td>
<td>10.3</td>
<td>0.1428</td>
<td>0.0186</td>
<td>0.0492</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>214</td>
<td>8.9</td>
<td>0.1134</td>
<td>0.0209</td>
<td>0.0358</td>
</tr>
<tr>
<td>Iowa</td>
<td>Democrat</td>
<td>333</td>
<td>8.44</td>
<td>0.0989</td>
<td>0.0127</td>
<td>0.1287</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>345</td>
<td>6.17</td>
<td>0.0422</td>
<td>0.009</td>
<td>0.2206</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>525</td>
<td>6.5</td>
<td>0.0669</td>
<td>0.0062</td>
<td>0.052</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Republican</td>
<td>699</td>
<td>7.3</td>
<td>0.0633</td>
<td>0.0052</td>
<td>0.0591</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Democrat</td>
<td>566</td>
<td>6.9</td>
<td>0.0985</td>
<td>0.0061</td>
<td>0.0461</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
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<td>7.9</td>
<td>0.083</td>
<td>0.0076</td>
<td>0.0674</td>
</tr>
<tr>
<td>Oklahoma</td>
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<td>156</td>
<td>4.3</td>
<td>0.0396</td>
<td>0.0139</td>
<td>0.0204</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>309</td>
<td>5.3</td>
<td>0.0269</td>
<td>0.0086</td>
<td>0.0193</td>
</tr>
</tbody>
</table>

1Colorado networks created with additional restrictions to be equivalent and comparable with the other states.

The average degree also varies substantively across these states. In the Colorado Democratic *ally only* networks, each actor has ties to an average of 13.7 other actors. On the other hand, in the Oklahoma Democratic *ally only* network, actors only have connections with 4 other actors on average. The average degree is highest in the Colorado Democratic networks, the Iowa Democratic networks, and the New Mexico Democratic and Republican networks. This is also true for *party only* networks, although the North Carolina *party only* networks also have comparatively high average degree. Chamber competition is high in Colorado, Iowa and New Mexico, providing some initial evidence that states with more competition have more connected parties.
In Tables 5.2 and 5.3, we see that transitivity is low for all *ally only* and *party only* networks. Additionally, transitivity scores are quite similar for each state party across network type. These low transitivity, or clustering coefficient, scores suggest a general lack of small worlds (i.e., complete groups) in state party networks. Instead, state parties tend to have several highly connected actors linking actors with few connections. Without these actors with high degree, the party actors might separate into many small networks. When considered along with the other network measures, most of these parties appear to be sparsely connected. Therefore, it is not particularly surprising that only a few actors are connecting a majority of the network.

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Avg. Degree</th>
<th>Transitivity</th>
<th>Density</th>
<th>Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado¹</td>
<td>Democrat</td>
<td>187</td>
<td>10</td>
<td>0.2274</td>
<td>0.027</td>
<td>0.2104</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>273</td>
<td>5.4</td>
<td>0.067</td>
<td>0.0099</td>
<td>0.1094</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>200</td>
<td>9.1</td>
<td>0.1764</td>
<td>0.0228</td>
<td>0.0797</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>182</td>
<td>8.7</td>
<td>0.1346</td>
<td>0.0242</td>
<td>0.0433</td>
</tr>
<tr>
<td>Iowa</td>
<td>Democrat</td>
<td>267</td>
<td>6.44</td>
<td>0.1001</td>
<td>0.0121</td>
<td>0.2177</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>323</td>
<td>5.62</td>
<td>0.04</td>
<td>0.0087</td>
<td>0.2628</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>384</td>
<td>6.1</td>
<td>0.0796</td>
<td>0.0079</td>
<td>0.08</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Republican</td>
<td>505</td>
<td>6.9</td>
<td>0.0867</td>
<td>0.0068</td>
<td>0.0896</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Democrat</td>
<td>429</td>
<td>5.9</td>
<td>0.1239</td>
<td>0.0069</td>
<td>0.0728</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
<td>379</td>
<td>6.2</td>
<td>0.0829</td>
<td>0.0082</td>
<td>0.1201</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Democrat</td>
<td>139</td>
<td>3.1</td>
<td>0.0243</td>
<td>0.0111</td>
<td>0.0351</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>240</td>
<td>3.7</td>
<td>0.0357</td>
<td>0.0078</td>
<td>0.0393</td>
</tr>
<tr>
<td>Texas¹</td>
<td>Democrat</td>
<td>318</td>
<td>5.4</td>
<td>0.087</td>
<td>0.0125</td>
<td>0.1128</td>
</tr>
<tr>
<td>Texas</td>
<td>Republican</td>
<td>544</td>
<td>6.1</td>
<td>0.0649</td>
<td>0.0083</td>
<td>0.0479</td>
</tr>
</tbody>
</table>

¹Colorado and Texas networks created with additional restrictions to be equivalent and comparable with the other states.

Plotting the degree distribution further demonstrates this hierarchical structure of state parties. Graphs of the degree distribution for all 2012 *ally only* and *party only* networks (Figures 5A.17 - 5A.29 in the chapter appendix) reveal a heavily right-skewed distribution. Most party actors have only a few connections, while a few actors have a
large number of relationships. For example, we see this distribution clearly in the Iowa *ally only* networks (Figure 5.24). In Figure 5.24, there is a high frequency of Democratic and Republican actors with low degree (1-2). The frequency of actors then decreases as the number of actors’ connections, or degree, increases. Thus, it is clear that a few actors with high degree (>20) account for most of the relationships in the network and are key to connecting the network.

**Figure 5.24: 2012 Iowa Party Coalition Networks with Ally Groups Only – Degree Distribution**

However, even though most scores are low, there is some variation across states in transitivity. Colorado Democratic networks and both New Mexico party networks have
higher, often twice as high, transitivity scores as the other party networks. Therefore, the Colorado Democratic party networks and New Mexico party networks have more small worlds. This provides some more evidence that parties in states with competitive elections are more connected.

Density also provides some insight into the connectivity of these party networks. In Table 5.2 and 5.3, the density scores for all state ally only and party only networks are very low. Thus, only a small proportion of all possible relationships are present in these state party networks. Like transitivity, density is relatively stable across state ally only and party only networks. This means that state parties, in general, are sparse networks with relatively few actors connecting (i.e., donating) to other party actors.

The final measure of connectedness included in Table 5.2 and 5.3 is reciprocity. Like the transitivity and density scores, reciprocity is low for most of these party networks. Reciprocity measures whether relationships are mutual, which in these networks would be two actors contributing to each other. Unsurprising, reciprocity scores are lower for ally only networks. These networks do not include data on donations to allied groups, restricting reciprocity in ally only networks.

Although most relationships are not reciprocal or mutual in these networks, Colorado and Iowa party only networks have more symmetric relationships than other state parties. Colorado, New Mexico, and Iowa parties tend to have higher scores on the other connectedness measures as well, suggesting that parties in states with competitive chambers are more connected and more cooperative than the other state parties.

The measures in Tables 5.2 and 5.3 do not really support my other expectations. The level of the influence of money and electoral competition do not appear to be related
to party connectedness. Interestingly, apart perhaps from Colorado and New Mexico, these connectedness measures do not indicate strong or well-connected parties. Instead, these state parties, even those with many actors, are sparse and hierarchical. Additionally, these state party networks are astonishingly similar. The general lack of substantive differences in networks beyond the average number of connections is very surprising, but may be due to the low connectivity in all these parties.

Structural Holes in Party Networks. Before using structural holes theory to examine the identity and role of brokers in state parties in Chapter 6, I must explore the existence of structural holes in these networks. Identifying structural holes is difficult and often subjective to the researcher (Burt 1992, 2005). Despite these concerns with measuring structural holes, it is important for me to have some conception of the quantity of structural holes in state party networks.

Additionally, I can test hypothesis 1 by examining the presence of structural holes in party networks. As the influence of money in state legislatures rises, the demand for campaign resources grows (Powell 2012). Party actors’ contributions become more strategic, which may increase the number of structural holes in party networks. Therefore, as the level of the influence of campaign contributions increase, party networks are likely to have more structural holes (Hypothesis 1).

One method for identifying structural holes in social networks is a triad census (Hanneman and Riddle 2005). Triad census calculates the number of different types of connections among three actors. There are sixteen possible types of triads in a directed network, including no relationships among the three actors and a complete triad (each
actor has a tie to the other two). Six types of triads have the potential for structural holes because one actor connects two otherwise-unconnected actors (i.e., a brokerage relationship). As a measure of the structural holes present in a party network, I calculate the percent of triads with at least two relationships\textsuperscript{73} that are one of these six types of triads. Table 5.4 presents the results for the 2012 \textit{ally only} networks and Table 5.5 contains the calculation for the 2012 \textit{party only} networks. I list the states by the level of influence that money has in the legislature.

**Table 5.4: Percentage of Connections with Structural Holes in Ally Only Networks for 2012 Election**

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Percentage Structural Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>Democrat</td>
<td>333</td>
<td>96.5%</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>345</td>
<td>98.6%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Democrat</td>
<td>566</td>
<td>96.5%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
<td>519</td>
<td>97.1%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>525</td>
<td>97.7%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Republican</td>
<td>699</td>
<td>97.8%</td>
</tr>
<tr>
<td>Colorado\textsuperscript{1}</td>
<td>Democrat</td>
<td>246</td>
<td>91.3%</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>344</td>
<td>97.7%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>277</td>
<td>94.7%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>214</td>
<td>95.9%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Democrat</td>
<td>156</td>
<td>98.6%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>309</td>
<td>99.1%</td>
</tr>
</tbody>
</table>

\textsuperscript{1}Colorado networks created with additional restrictions to be equivalent and comparable with the other states.

The percentage of triad relations that have structural holes is large for all state networks in Tables 5.4 and 5.5. However, the influence of money does not appear to correspond to the percentage of structural holes. The Colorado Democratic networks and

\textsuperscript{73} By far, in these networks, most triads consist of no relationships among the three actors. Due to the overwhelming number of these non-existent triangles, I did not including them in this analysis. By not including these triads in this calculation, I am probably underestimating the presence of structural holes in these networks since these indicate a structural hole without a broker.
New Mexico parties have a slightly smaller proportion of structural holes in both the *ally only* and *party only* networks, which may be due to the higher level of connectedness in these networks. There was at least one highly competitive chamber in both Colorado and New Mexico. Perhaps competition decreases the presence of structural holes in party networks by motivating party actors contribute to more candidates, thereby closing structural holes.

Table 5.5: Percentage of Connections with Structural Holes in Party Only Networks for 2012 Election

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Percent with Structural Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>Democrat</td>
<td>267</td>
<td>96.4%</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>323</td>
<td>98.6%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Democrat</td>
<td>429</td>
<td>95.5%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
<td>379</td>
<td>97.1%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>384</td>
<td>97.2%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Republican</td>
<td>505</td>
<td>96.9%</td>
</tr>
<tr>
<td>Colorado¹</td>
<td>Democrat</td>
<td>187</td>
<td>91.1%</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>273</td>
<td>97.7%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>200</td>
<td>93.3%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>182</td>
<td>95.1%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Democrat</td>
<td>139</td>
<td>99.2%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>240</td>
<td>98.9%</td>
</tr>
<tr>
<td>Texas¹</td>
<td>Democrat</td>
<td>318</td>
<td>96.7%</td>
</tr>
<tr>
<td>Texas</td>
<td>Republican</td>
<td>544</td>
<td>97.7%</td>
</tr>
</tbody>
</table>

¹Colorado and Texas networks created with additional restrictions to be equivalent and comparable with the other states.

Due to the sparseness and low connectedness of these networks, the existence of so many structural holes is not surprising. However, this is a rough estimate of structural holes in party networks. Burt (2000, 2005) recommends studying structural holes by measuring access to structural holes, which he considers synonymous with brokerage opportunities. Therefore, to develop a better understanding of structural holes in party networks.
networks, I identify actors connecting actors across structural holes (i.e., brokers) and examine their role in Chapter 6.

**Conclusion**

This chapter includes a great deal of analysis on state party networks, starting with research on state donor pools. By beginning with an evaluation of state donor pools, I demonstrate the peripheral role of some actors in party networks (e.g., individual donors). Additionally, I find that candidates are active donors to party committees and other candidates. We know little about candidate contributions to other party actors, so determining that state candidates do give donations is an important finding.

In research on social networks, researchers rarely discuss the decisions they make regarding the actors included or removed for the studied networks. In an effort to be more clear and transparent about my decisions regarding party network creation, I compare across different network types and criteria to determine the most appropriate network composition for this study. I find that decisions regarding which actors to include in a network do impact the network structure. Researchers need to be careful and open about the choices they make when creating networks.

Through this analysis on network creation and criteria, I decide that *ally only* and *party only* networks are the most appropriate networks for this study. By examining network graphs and network statistics, I find a remarkable degree of similarity across state party networks. Most party networks tend to be hierarchical and rather sparse. However, several states with competitive chambers (Colorado, New Mexico, Iowa) do tend to have more connected networks. Additionally, Oklahoma party networks, a state
with low competition and no competitive chambers, are sparser and less connected than the other parties. These findings suggest that competition does influence the structure of party networks. I explore this further in the following chapter.

Identifying and measuring structural holes at the network level is difficult. In this preliminary analysis, I find a large quantity of structural holes present in state party networks. This makes sense due to the low connectedness of these networks. In the next chapter, I evaluate the existence of structural holes in party networks with actor-level measures. By using actor-level measures, I should reach a better understanding of structural holes in state parties. Furthermore, with these actor-level measures, I can examine how actors’ positions in the network impact their success in attaining power and influence (i.e., leadership positions) in the legislature.
Chapter 5 Appendix

Figure 5A.1: Number of Unique Recipients by Donor Type in Pennsylvania

2010

<table>
<thead>
<tr>
<th></th>
<th>Individuals</th>
<th>Groups</th>
<th>Candidates</th>
<th>Party Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2012

<table>
<thead>
<tr>
<th></th>
<th>Individuals</th>
<th>Groups</th>
<th>Candidates</th>
<th>Party Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of Recipients
2012 Network Creation Graphs

Figure 5A.2: Number of Actors and Connections by Network Creation Criteria in 2012 Election: Large Criteria*

*All networks include candidates and party committees
**Bar labels are the number of connections per actor
Figure 5A.3: Number of Actors and Connections by Network Creation Criteria in 2012 Election: Stricter Criteria

*All networks include candidates and party committees

**Bar labels are the number of connections per actor

- Republican
  - Major Groups Only
  - Ally Only
  - Party Only

- Democrat
  - Major Groups Only
  - Ally Only
  - Party Only

Regions:
- Colorado
- Iowa
- New Mexico
- North Carolina
- Oklahoma
- Pennsylvania

In Thousands

<table>
<thead>
<tr>
<th>Region</th>
<th>Actor Count</th>
<th>Connection Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>7.3</td>
<td>3.525</td>
</tr>
<tr>
<td>Iowa</td>
<td>7.4</td>
<td>3.525</td>
</tr>
<tr>
<td>New Mexico</td>
<td>5</td>
<td>8.5</td>
</tr>
<tr>
<td>North Carolina</td>
<td>6.5</td>
<td>1.188</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>2.7</td>
<td>3.1</td>
</tr>
</tbody>
</table>

*Figure shows the number of actors and connections for different network creation criteria in the 2012 election.*
Figure 5A.4: Number of Actors by Network Criteria and Data Type in the 2012 Election*

*All networks include candidates and party committees

**Bar labels are the number of connections per actor
Figure 5A.5: 2010 Colorado Democratic Party Coalition with Ally Groups Only

Figure 5A.6: 2010 New Mexico Democratic Party Coalition with Ally Groups Only

*Created with NIMSP Restrictions
Figure 5A.7: 2010 Iowa Democratic Party Coalition with Ally Groups Only

Figure 5A.8: 2010 North Carolina Republican Party Coalition with Ally Groups Only
Figure 5A.9: 2010 Pennsylvania Republican Party Coalition with Ally Groups Only

Figure 5A.10: 2010 Oklahoma Republican Party Coalition with Ally Groups Only
Figure 5A.11: 2010 Colorado Republican Party Coalition with Ally Groups Only

*Created with NimSP Restrictions

Figure 5A.12: 2010 New Mexico Republican Party Coalition with Ally Groups Only
Figure 5A.13: 2010 Iowa Republican Party Coalition with Ally Groups Only

Figure 5A.14: 2010 North Carolina Democratic Party Coalition with Ally Groups Only
Figure 5A.15: 2010 Pennsylvania Democratic Party Coalition with Ally Groups Only

Figure 5A.16: 2010 Oklahoma Democratic Party Coalition with Ally Groups Only
2012 *Ally Only* Degree Distribution Plots

**Figure 5A.17:** 2012 Colorado Party Coalition Networks with Ally Groups Only – Degree Distribution

**Figure 5A.18:** 2012 New Mexico Party Coalition Networks with Ally Groups Only – Degree Distribution
Figure 5A.19: 2012 Iowa Party Coalition Networks with Ally Groups Only – Degree Distribution

Figure 5A.20: 2012 North Carolina Party Coalition Networks with Ally Groups Only – Degree Distribution
Figure 5A.21: 2012 Pennsylvania Party Coalition Networks with Ally Groups Only – Degree Distribution

Figure 5A.22: 2012 Oklahoma Party Coalition Networks with Ally Groups Only – Degree Distribution
2012 *Party Only* Degree Distribution Plots

Figure 5A.23: 2012 Colorado Candidate and Party Committee Networks – Degree Distribution

Figure 5A.24: 2012 New Mexico Candidate and Party Committee Networks – Degree Distribution
Figure 5A.25: 2012 Iowa Candidate and Party Committee Networks – Degree Distribution

Figure 5A.26: 2012 North Carolina Candidate and Party Committee Networks – Degree Distribution
Figure 5A.27: 2012 Pennsylvania Candidate and Party Committee Networks – Degree Distribution

Figure 5A.28: 2012 Oklahoma Candidate and Party Committee Networks – Degree Distribution
### 2010 *Ally Only* and *Party Only* Connectedness Measures

Table 5A.1: 2010 *Ally Only* Networks - Connectedness Measures

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Avg. Degree</th>
<th>Transitivity</th>
<th>Density</th>
<th>Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado¹</td>
<td>Democrat</td>
<td>331</td>
<td>11.4</td>
<td>0.1881</td>
<td>0.0213</td>
<td>0.0819</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>506</td>
<td>10.7</td>
<td>0.0296</td>
<td>0.0106</td>
<td>0.0098</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>309</td>
<td>10</td>
<td>0.1567</td>
<td>0.0163</td>
<td>0.035</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>254</td>
<td>7</td>
<td>0.0684</td>
<td>0.0139</td>
<td>0.0402</td>
</tr>
<tr>
<td>Iowa</td>
<td>Democrat</td>
<td>307</td>
<td>12.1</td>
<td>0.1474</td>
<td>0.0198</td>
<td>0.1299</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>358</td>
<td>7.3</td>
<td>0.0641</td>
<td>0.0103</td>
<td>0.1115</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>408</td>
<td>6.3</td>
<td>0.0713</td>
<td>0.0077</td>
<td>0.1386</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Republican</td>
<td>422</td>
<td>7.7</td>
<td>0.0973</td>
<td>0.0091</td>
<td>0.0978</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Democrat</td>
<td>618</td>
<td>7.8</td>
<td>0.0951</td>
<td>0.0063</td>
<td>0.0529</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
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<td>0.0762</td>
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<td>0.0682</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Democrat</td>
<td>239</td>
<td>5.8</td>
<td>0.0661</td>
<td>0.0121</td>
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<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>294</td>
<td>6</td>
<td>0.0358</td>
<td>0.0103</td>
<td>0.0025</td>
</tr>
</tbody>
</table>

¹Colorado networks created with additional restrictions to be equivalent and comparable with the other states.

Table 5A.2: 2010 *Party Only* Networks - Connectedness Measures

<table>
<thead>
<tr>
<th>State</th>
<th>Party</th>
<th>Actors</th>
<th>Avg. Degree</th>
<th>Transitivity</th>
<th>Density</th>
<th>Reciprocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado¹</td>
<td>Democrat</td>
<td>162</td>
<td>8.6</td>
<td>0.1748</td>
<td>0.0268</td>
<td>0.1838</td>
</tr>
<tr>
<td>Colorado</td>
<td>Republican</td>
<td>235</td>
<td>4.6</td>
<td>0.0483</td>
<td>0.0099</td>
<td>0.0533</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>206</td>
<td>8.4</td>
<td>0.182</td>
<td>0.0205</td>
<td>0.0646</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>202</td>
<td>6.8</td>
<td>0.0894</td>
<td>0.017</td>
<td>0.053</td>
</tr>
<tr>
<td>Iowa</td>
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<td>228</td>
<td>7.9</td>
<td>0.1351</td>
<td>0.0172</td>
<td>0.2806</td>
</tr>
<tr>
<td>Iowa</td>
<td>Republican</td>
<td>324</td>
<td>6.3</td>
<td>0.0587</td>
<td>0.0097</td>
<td>0.1468</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Democrat</td>
<td>206</td>
<td>8.4</td>
<td>0.182</td>
<td>0.0205</td>
<td>0.0646</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Republican</td>
<td>202</td>
<td>6.8</td>
<td>0.0894</td>
<td>0.017</td>
<td>0.053</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Democrat</td>
<td>348</td>
<td>5.4</td>
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<td>0.0078</td>
<td>0.1934</td>
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<td>Republican</td>
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<td>0.1079</td>
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<td>Pennsylvania</td>
<td>Democrat</td>
<td>454</td>
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<td>0.0892</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Republican</td>
<td>447</td>
<td>5.9</td>
<td>0.0776</td>
<td>0.0066</td>
<td>0.1118</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Democrat</td>
<td>202</td>
<td>4.4</td>
<td>0.0604</td>
<td>0.011</td>
<td>0.0305</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Republican</td>
<td>240</td>
<td>4.8</td>
<td>0.0528</td>
<td>0.01</td>
<td>0.0041</td>
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<tr>
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<td>Democrat</td>
<td>331</td>
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<td>0.0156</td>
<td>0.2003</td>
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<td>472</td>
<td>5.5</td>
<td>0.0399</td>
<td>0.0075</td>
<td>0.0538</td>
</tr>
</tbody>
</table>

¹Colorado and Texas networks created with additional restrictions to be equivalent and comparable with the other states.
Chapter 6: Candidates in State Party Networks and the Path to Leadership

Introduction

“I believe our state party was tremendously generous in contributing at least $500 to every Republican [legislator] up for election, and we would be remiss not to follow up and ask for a contribution back. I believe receiving only three contributions is not acceptable and we should follow up with each of these legislators in an effort to show them that we are looking for a team effort, but from both sides, theirs included” – Republican Party of Iowa Executive Director Steve Bierfeldt, February 2013 email to Iowa Republican State Central Committee

“I believe we as Republicans need to support our state organization.” – Iowa Senator Brad Zaun

After the 2012 election, the Republican Party of Iowa attempted to raise money from Republican members of the Iowa House and Senate. As described above, by 2013, only three Republican legislators had contributed to the state party committee. In response, the Executive Director, Steve Bierfeldt, emailed the Iowa Republican State Central Committee to facilitate their help in collecting contributions from Republican legislators. In one paragraph, quoted above, he expresses a desire for teamwork and calls for all legislators to contribute since the committee provided financial support to all Republican legislators in the previous election.

This email provoked debate among Republican legislators, especially legislators elected with the support of the Tea Party. Some of these members feared the Republican Party of Iowa would use their own money against them in the next primary election. However, other members like Senator Brad Zaun argued that campaigns are a team effort and that members should donate the requested amount (K. Hall 2013).

While requests for members to donate to party committees in Iowa have spurred debate, this is not the case at the national level. Members of Congress are now key funders in Congressional elections. In the 2010 election, members of the U.S. House
donated over $100 million to fellow Congressional candidates and national party committees (Heberlig and Larson 2012). Moreover, members of Congress are expected to contribute to the party in order to gain or maintain leadership positions (Cann 2008; Currinder 2009; Schweizer 2013). For example, the Democratic Congressional Campaign Committee (DCCC) assigned dues for Democratic members of the House based on their leadership status. Ranking members of committees faced dues of $250,000 to the party committee. The assigned dues for ranking members of exclusive committees (e.g., Ways & Means) were $500,000. The Republican Party, on the other hand, assessed dues of $165,000 to chairs of exclusive and money committees (Schweizer 2013). Though some leaders and members did not meet their dues, giving funds to party committees and other members is an institutionalized and frequent activity for members of congress.

Although a majority of state candidates contribute to other candidates and party committees (see Chapter 5), this behavior does not seem to be as institutionalized as in Congressional elections. The percentage of candidates contributing in state elections varies across states. For example, over 80% of Iowa statewide and legislative candidates contributed to other candidates and party committees in the 2010 and 2012 state elections. On the other hand, around 50% of candidates in Texas gave resources to other candidates and party committees in the 2010 and 2012 state elections. In both election cycles, at least one Iowa legislative chamber was competitive with a threat of party control switching. While in Texas, the Republican Party entered both elections with little doubt they would retain both chambers (L. Jacobson 2010).

This variation in the proportion of candidates contributing in elections may be due to differences in candidates’ motivation or incentives to donate. If the incentives for
candidates are low, then we would expect a lower proportion of candidates contributing to other candidates and party committees. Therefore, in this chapter, I examine whether party actors pursue individualistic or party-oriented contribution strategies. In Congressional races, party-oriented strategies in which actors focus contributions to candidates in competitive races are dominant (Heberlig and Larson 2012). The desire for majority status or leadership positions motivates candidates to support the party and redistribute funds to the important competitive races. However, individualistic allocation strategies (e.g., donating to friends) may be more common for candidates in less professional or less-competitive state elections, since they lack strong incentives to donate to other candidates (e.g., partisan control, leadership).

Additionally, I study how influence in party networks in elections translates to power in legislatures. In Congress, members seeking leadership positions must be major donors to other candidates and party committees (Cann 2008; Currinder 2009; Heberlig and Larson 2012; Kanthak 2007). I argue that candidates’ influence within the party network, not the total amount redistributed, impacts their probability of receiving a leadership position. Specifically, I test whether candidates acting as brokers in state party networks are more likely to become legislative leaders than candidates with less influence in the network. Through this analysis, I can begin to examine the connection between electoral party networks and legislative politics.

**Brokers in State Party Networks**

Measuring influence in social networks is important for understanding an actor’s access to other actors and resources and prominence in the organization. Identifying
influential actors in state party networks is important for several reasons. First, in order to understand the allocation strategies adopted by actors in state elections, we need to know which actors are major recipients of resources from other party actors. By identifying the types of candidates influential in the network, we can better understand the contribution strategies used by state parties. Additionally, position determines influence (Brass 1984; Kanter 1977), which allows us to study whether prominence in a network predicts the success of candidates in elections and the legislature.

Although multiple network positions bring influence to actors (i.e., central actors), brokers have advantaged positions and are often rewarded for their “integrative work” (Burt 2005, 7). Brokers, also known as gatekeepers, are actors that lie between other points or actors in a network. Being between actors, thereby connecting them, provides brokers with influence because their connections are dependent on them to reach or access other actors in the network (L. C. Freeman 1979; J. Scott 2000). In other words, actors are dependent on a broker because the paths connecting these actors go through the broker.

This is the same concept as Burt’s structural holes theory (1992, 2005). Structural holes are the lack or gap in connections between actors. Brokers bridge these gaps and connect actors on both sides of the holes. Again, this creates a dependency on brokers to access or connect to other actors in the network, which provides them with influence and prominence. By connecting clusters, brokers ensure the distribution of new ideas and resources throughout the network. This provides brokers with influence and a competitive advantage due to their better access to information and resources through their more

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74 Social network scholars often refer to this assumption as local dependency (Scott 2000).
numerous (and less redundant) connections. Therefore, brokers are more likely to receive new opportunities when they arise, like promotions (Burt 1992, 2000).

In this study, I use Burt’s constraint score to identify whether an actor in a state party network is a broker and, consequently, influential in the network. As discussed in Chapter 3, this measure is a summary index that calculates an actor’s access to non-redundant contacts. It spans from 0 to 1 with scores near 0 indicating the actor is a broker and a score of 1 signifying that the actor has few or redundant contacts (e.g., is not influential in the network). The score also measures the extent to which an actor’s connections are concentrated in one contact, which helps account for actors with many secondary connections through one major actor (Burt 2005, 2010).

An actor with mostly redundant contacts and few connections to the broad network will have a high constraint score (e.g., 0.5 to 1). He or she is unlikely to be bridging structural holes (i.e., be a broker), since brokers play a key role in connecting actors. Therefore, the actor is also unlikely to have much influence in the network. Constraint scores are often high when actors have few connections, belong to a densely connected network, or a central actor connects most of the network (Burt 2005).

Low constraint scores (e.g., 0 to 0.3) indict that an actor is serving as a broker by connecting otherwise unconnected actors or clusters. Therefore, brokers have access to actors and resources throughout the larger network, making them influential actors. This influence often provides brokers with more opportunities for rewards and advancement, like job promotions (Burt 2005).

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75 A contact is redundant if two of an actor’s ties are directly connected. For example: “If A is tied to both B and C, and B is tied to C… A’s tie to B is redundant, because A can influence B by way of C” (Hanneman and Riddle 2005).
Distributions of Party Actor Constraint Scores. Before using constraint scores in statistical analyses, it is useful to understand the distribution of scores in state party networks. In this chapter, I discuss distributions in the 2012 election. There is more variation in the level of chamber competitiveness in the 2012 election than in the 2010 election, making it more useful for discussion. Using the kernel density function in R, a non-parametric method of estimating probability distribution functions, I plot the distribution of constraint scores for ally only and party only networks for the 2012 election by state in Figures 6.1 – 6.6. I calculate the constraint scores separately for each network type to evaluate whether removing allied interest groups affects the presence and number of brokers. Like the discussion in Chapter 5, I organize these plots by the level of chamber competitiveness starting with the state with two highly competitive chambers (Colorado) and ending with the state with two uncompetitive chambers (Oklahoma).

Similar to a histogram, density plots demonstrate the distribution of data. However, the density distribution plots vary in that they graph an underlying probability density function based on the observed constraint scores. In the density functions plotted in Figures 6.1-6.6, the area under the curve represents the probability of constraint scores in that range. The total area under the curve equals one. Therefore, a higher curve indicates a higher, cumulative probability of scores in that range of values.

76 Distribution plots for ally only and party only networks in the 2010 election are included in the chapter appendix (Figures 6A.1-6A.6).
77 Reminder: Ally only networks include statewide and state legislative candidates, party committees, and interest groups that cooperate with the party. To meet the criteria as a party ally, the groups must not donate to both parties. Party only networks include only candidates and party committees.
Due to the relative sparseness of these state party networks, I expect constraint scores to have a bimodal distribution with peaks around low constraint scores (i.e., brokers) and high constraint scores. Two-peaked distributions are likely because these loosely connected networks include some highly connected, central actors and many peripheral actors with few connections (see Figure 5.24 and Figures 5A.17-5A.29). Thus, the distribution of constraint scores will peak around low scores (e.g., central actors) and around high scores (e.g., peripheral actors).

The following figures include separate distributions for Democratic and Republican actors. This allows us to evaluate whether the pattern of constraint scores varies by party. Additionally, by separating the distributions by party, we can examine whether constraint scores differ for majority and minority parties.

Figure 6.1 includes the density plots of constraint scores for Colorado *ally only* and *party only* networks in the 2012 election by political party. As expected, constraint score distributions are bimodal in both *ally only* and *party only* networks for both parties. Both distributions have peaks around low constraint scores (0-0.2) and high constraint scores (0.9-1.0). Therefore, as expected, actors have a higher probability of lower or higher constraint scores than moderate scores (0.3-0.7).

The distributions for the Colorado Democratic and Republican Parties are fairly similar. However, in the Democratic distribution, the higher peak (i.e., the major mode) is located at 0.1, the lower end of constraint scores. In the Republican distribution, on the other hand, the major mode has a midpoint around 1.0. The higher probability of having a high constraint score in the Colorado Republican Party may be due to its lower connectedness and density than the Colorado Democratic Party (see Tables 5.2 and 5.3).
With fewer connections in the network, fewer Republican actors may act as brokers. The differences in modes are rather small, so this discussion is more speculative rather than firm conclusions.

Figure 6.1: Distribution of Constraint Scores for 2012 Colorado Networks

Figure 6.1 contains the distributions of constraint scores in Colorado for both *ally only* and *party only* networks. Constraint scores are very similar in the *ally only* and *party only* plots for both parties. Removing allied groups does not appear to change the
composition and structure of the network enough to impact the distribution of constraint scores or the quantity of brokers.

Figure 6.2: Distribution of Constraint Scores for 2012 New Mexico Networks

Like Colorado, the distributions of constraint scores for 2012 party networks in New Mexico are also bimodal (Figure 6.2). However, unlike Colorado, the bimodal distributions for New Mexico parties heavily skew toward lower constraint scores, especially in the _ally only_ network. In both network types, the major mode at about 0.18 is much taller than the minor mode at 1.0. The much higher probability of having a low constraint score than a high constraint score may be due to the smaller and more
connected nature of New Mexico party networks (see Tables 5.2 and 5.3). After removing allied groups in the party only network, the distribution moderates for the Democratic Party with the difference between the major and minor mode declining. This suggests that some allied groups act as brokers, so removing them decreases the number of brokers and, therefore, the probability of an actor having a low constraint score.

In Figure 6.2, we can also compare the distributions of constraint scores for the Democratic and Republican Parties. Also like Colorado, the distributions are quite similar for both parties, especially in the party only network.

**Figure 6.3: Distribution of Constraint Scores for 2012 Iowa Networks**

![Density distribution for Democratic and Republican Parties for Ally Only and Party Only networks](image)
Figure 6.3 presents the constraint score distribution plots for Iowa party networks. Like the previous states, the distributions of constraint scores for actors in the 2012 Iowa election are also bimodal. More similar to Colorado, the Iowa distributions are not as skewed as New Mexico party distributions.

For both parties, one peak is at high constraint scores. The other peak, the major mode, is at low constraint scores for the Democrats. The second peak for the Republicans is a gradual one that encompasses more moderate constraint scores (0.3-0.6) than low ones (0-0.2). The Iowa Republican Party is much less connected than the Iowa Democratic Party (see Tables 5.2-5.3). This may contribute to this lower probability of being a broker in the Iowa Republican party network than other party networks. Additionally, the major mode is difficult to discern for the Republicans. It appears as though both peaks are about the same height. Clearly, however, quite a few Republican actors were active enough donors to become brokers. Despite the concerns of some Republican legislators about contributing to the Iowa Republican State Central Committee in 2013, many Republican actors were active in redistributing funds in the 2012 election.

The North Carolina constraint score distributions (Figure 6.4) are similar to the distributions for Iowa. The distributions are bimodal, but the first peaks around low/moderate scores are gradual and almost flat, especially in the ally only networks.

While the distributions for North Carolina Democratic and Republican distributions are incredibly similar, there are some differences in the ally only and party only networks. In the ally only networks, the two peaks are similar in height with one at 0.2 and the other at 1. After removing allied groups from the party networks, the
constraint score distributions in the *party only* network changes. The probability of having a high constraint score increases, while the probability of having a low and moderate score decreases. This suggests that some allied groups are key connectors. Removing them, therefore, results in a higher proportion of actors with few connections.

**Figure 6.4: Distribution of Constraint Scores for 2012 North Carolina Networks**

![Density plot of constraint scores for Democratic and Republican parties in 2012 North Carolina networks.](image)

**Party Only Constraint Scores**

Density

0.0 0.2 0.4 0.6 0.8 1.0

Democratic Party

Republican Party
Figure 6.5 includes the distribution plots of constraint scores for Pennsylvania party networks. In Pennsylvania, like Colorado and New Mexico, the distributions are bimodal with two distinct peaks around low and high constraint scores. In the ally only networks, the major mode for both parties is around 0.18 with the minor mode at 1. For both parties, the major mode shifts to 1 in the party only network. Similar to several previous state parties, removing allied interest groups appears to remove some brokers or well-connected actors. This increases the number of actors with high constraint scores,
thus increases the probability of having a high constraint score in the Pennsylvania party only networks. Like North Carolina, the Pennsylvania Democratic and Republican distributions are very similar.

**Figure 6.6: Distribution of Constraint Scores for 2012 Oklahoma Networks**

In Figure 6.6, like in the previous states, the Oklahoma constraint score distributions are also bimodal. Like several previous states, the Democratic and Republican constraint score follow each other closely. However, there are some clear differences in the ally only and party only distributions. The two peaks have very similar
heights in both party distributions for the *ally only* networks. The probability of having a low or high constraint score is quite close for Democratic and Republican *ally only* distributions. This changes for the *party only* networks. In the *party only* distributions, the major mode shifts clearly to high scores. Allied groups are important connectors in Oklahoma parties, so removing them increases the number of actors with few connections and increases the proportion of actors with high constraint scores.

**Conclusions from Constraint Score Distributions.** Although there is some variation across states in the distributions of constraint scores, there are also some important similarities. As expected, the distributions are bimodal for parties in each state. Party networks include both high and low constraint scores. This bimodal distribution is important, because without variation in constraint scores the variable would not be useful for understanding the impact of party network structure on electoral and legislative politics.

Additionally, the Democratic and Republican distributions are very similar in these figures. The distributions are almost exactly the same in several states, including North Carolina and Oklahoma. This level of similarity is surprising, especially since there are some differences in the structure of Democratic and Republican party networks in these states. For example, groups are much more active and connected in the Oklahoma Republican Party than the Democratic Party. Perhaps the slight differences in the constraint score distributions are more meaningful than they may appear to be.

In these figures, there are some variations in the patterns of distributions. Although all are bimodal, some skew towards high or low constraint scores, like the New Mexico and Oklahoma *party only* distributions. This may be due to key differences
across the states, including the role of groups in the party network and organizing motivations. In the next sections, I try to better understand these variations across states by more deeply exploring the identity of brokers.

**Allocation Strategies**

In elections, donors tend to adopt particular donation strategies depending on their goals and motivations (Brunell 2005; Gierzynski and Breaux 1991; Heberlig and Larson 2012). For example, some PACs tend to contribute to incumbents in an effort to ensure their groups’ interests are fulfilled (Brunell 2005; Grier and Munger 1986; Powell 2012). Parties, on the other hand, contribute money and resources to candidates with the main goal of maximizing their seats (Brunell 2005; Damore and Hansford 1999; Herrnson 1986; G. C. Jacobson 1985; Schecter and Hedge 2001). Understanding the type of allocation strategies adopted by party actors in state elections will help illuminate the level of cooperation among state parties and the power of parties in state elections.

As discussed in previous chapters, identifying brokers allows me to examine the types of contribution strategies that party actors adopt. In this study, I focus on party-oriented and individualistic contribution strategies (Heberlig and Larson 2012). When operating with party-centered strategies, members give contributions to candidates or party committees with the goal of advancing the party’s interest (i.e., majority status). Individualistic campaign strategies, on the other hand, involve giving contributions more on the basis of personal relationships. Heberlig and Larson find that party-centered strategies are now dominant in Congressional elections. This finding is not surprising due to the institutionalization of candidate giving in Congressional elections and the (now
formal) norm that members of Congress contribute resources to party actors in order to receive or maintain leadership positions (Cann 2008; Currinder 2009; Heberlig and Larson 2012).

In state elections, we know that parties tend to shift their donation strategies depending on their majority status (Stonecash and Keith 1996; Stonecash 1988). However, previous research usually includes only party committees or officeholders. Therefore, we do not know whether candidates tend to allocate their resources in an effort to support party goals or for personal reasons, such as giving to friends. By including candidates and party allies in the analysis, I can better evaluate the allocation strategies and cooperation of party actors comparatively across states.

In states where majority status is a viable possibility, there are more incentives for party actors to contribute personal resources to help the party. Majority status brings more party and personal power in office, particularly more powerful leadership positions (Cox and McCubbins 1994, 2005; Herrnson 2009; Rohde 1991; Schlesinger 1994). Therefore, competitive elections or chambers will help motivate party actors to adopt party-oriented or centered allocation strategies. *I expect that party-oriented strategies are more likely to be the dominant campaign strategy in states with competitive elections (Hypothesis 2).*

I examine the presence of party-oriented or individualistic contribution strategies in state elections by comparing candidates’ competitiveness with their constraint score. If actors with low constraint scores (i.e., brokers) tend to be competitive candidates, then party actors are distributing resources in an attempt to benefit the party’s electoral status (i.e., a party-oriented contribution strategy). If party actors use an individualistic
campaign strategy when redistributing resources (e.g., giving mostly to friends), then we should not find any relationship between the identity of brokers and competitiveness.

Measuring the competitiveness of elections is difficult. In the following analysis, I consider states with competitive elections to be those with at least one chamber that is highly competitive. I consider a legislative chamber to be highly competitive if the difference between the majority and minority party is five seats or fewer before the election.\textsuperscript{78} Colorado, New Mexico, and Iowa had competitive elections in the 2012 election using this measure. Oklahoma was the least competitive state in 2012 with two uncompetitive chambers.\textsuperscript{79}

I use several different measures of candidate competitiveness. First, I use a categorical variable that indicates whether the candidate is an uncontested candidate, an uncompetitive candidate, or a competitive candidate. Uncompetitive candidates are those that lost with 0%-40% of the vote or won with at least 60% of the vote. Like most previous research, I code competitive candidates as those receiving between 40% and 60% of the vote. I separate uncontested candidates from uncompetitive candidates. Uncontested candidates are usually safe incumbents that tend to be leaders and major donors (Hogan 2004; Konisky and Ueda 2011; Pritchard 1992).

The calculation of Burt’s constraint score does not incorporate the direction of relationships (i.e., donations). Consequently, candidates that donate or receive numerous donations will be highly connected and are likely to have low constraint scores. Thus, I

\textsuperscript{78} Although many state legislative races are not competitive (Donovan et al. 2014; Hamm and Moncrief 2013), there are usually at least five competitive races. Therefore, I consider a party with a majority of five or fewer seats to be at real risk of losing their majority in the next election (Carsey et al. 2008).

\textsuperscript{79} In both Oklahoma chambers, Republicans held more than a 15-seat majority in 2011-12.
expect competitive candidates and uncontested candidates to be brokers in state party networks.

Analysis using candidates’ percentage of the vote is not appropriate because the percentage of votes and constraint scores have a negative, non-linear relationship. Constraint scores decrease as candidates’ percentage of the vote increases (i.e., as candidates become competitive). As candidates become uncompetitive winners, constraint scores then begin to decrease. Therefore, in order to have a linear measure of candidate competition, I use a folded competition variable. To create this variable, I use the equation: \( f_i = 1 - |v_i - .5| \), where \( v_i \) is the candidate’s vote percentage. This calculation ensures that uncompetitive candidates, whether losing or winning, are on the same end of the measure (.5-.6). Competitive candidates now have high values (.9-1). This measure of race competitiveness makes interpretation easier since we can now expect constraint scores to decrease as (folded race) competition increases.

I evaluate Hypothesis 2 with several different methods. First, using box plots, I compare the distribution of state legislative candidates’ constraint scores with their level of competitiveness.\(^\text{80}\) By plotting the constraint scores with box plots, we can compare the median constraint scores while also including the 25\(^{\text{th}}\) and 75\(^{\text{th}}\) percentiles (the lower and upper hinges/borders of the box). By including the distribution of the scores, we can get a more complete view of the variance in scores across level of competitiveness than is possible when comparing only mean scores.

\(^\text{80}\) In this section, I continue to focus on the 2012 election. Box plots of the distribution of constraint scores by Democratic and Republican candidate competitiveness in the 2010 election for ally only networks are included in the chapter appendix (Figures 6A.7 and 6A.8).
Figure 6.7 includes box plots for the 2012 Democratic candidates for *ally only* networks. In each state, we can compare the distribution of constraint score for uncontested, uncompetitive, and competitive candidates. In most states, competitive candidates clearly have lower constraint scores than uncompetitive candidates. The median score (the line inside the box) is lower for competitive candidates than uncompetitive in all six states. Additionally, the scores at the 75th percentile (the upper quartile/hinge) are lower for competitive candidates than uncompetitive for five states. The only exception is Oklahoma, in which the constraint score at the 75th percentage for competitive candidates is higher (1) than that of uncompetitive candidates (0.7). As expected, uncontested also tend to have lower constraint scores than uncompetitive candidates. This is likely due to their role as funders in state elections. However, this result is not as consistent across states as for competitive candidates.
These findings indicate that brokers (i.e., candidates with low constraint scores) tend to be competitive candidates. This is especially true in the states with more competitive elections (CO, NM, IA). The influential position of most competitive candidates demonstrates that party actors are redistributing their resources in an attempt to advance the party’s position by maintaining or extending their seat share. The Democrats are firmly in the minority in Oklahoma, so perhaps their minority status discourages party actors from adopting allocation strategies that benefit the party and instead contribute for personal reasons. Figure 6.7 provides some initial support for Hypothesis 2, but we must also evaluate the party only networks before making firm conclusions about Democratic allocation strategies.

Figure 6.8 presents the box plots of constraint scores for Democratic party only networks. Like the Democratic ally only networks, competitive candidates tend to have
lower constraint scores than uncompetitive candidates. In most states, Democratic actors seem to be targeting donations to competitive candidates, presumably in an effort to expand the party’s number of seats. Hence, Democratic actors do appear to use party-centered allocation strategies when redistributing funds in state elections.

The box plots of Democratic constraint score in the *ally only* and *party only* networks are quite similar. The main difference is a shift in higher constraint scores for uncontested candidates in Iowa and all candidates in Oklahoma. As discussed previously, allied groups are highly connected actors in Oklahoma. Removing these groups in the *party only* network may increase constraint scores because the network loses a substantial number of connections.

The box plots for Republican candidates’ constraint score in *ally only* networks also confirm Hypothesis 2. In Figure 6.9, we see that competitive candidates consistently
have lower constraint scores than uncompetitive candidates. Republican actors appear to also direct resources to competitive candidates, supporting the expectation that party actors use party-centered allocation strategies.

Also like the Democrats, uncontested candidates in Figure 6.9 tend to be brokers in four states: Colorado, New Mexico, North Carolina, and Pennsylvania. In order to have such low constraint scores in some of these states, uncontested candidates must be very active donors.

Finally, Figure 6.10 includes the box plots for Republican candidates in party only networks. Although the distributions of constraint scores do vary some from the ally only network, the key finding remains. Competitive candidates have lower constraint scores than uncompetitive candidates. Republican actors, like the Democrats, do direct more donations to competitive candidates.
The increase in constraint scores for competitive candidates in Oklahoma is the main change in Figure 6.10. As with the Democrats, the Oklahoma Republican network is more reliant on allied groups than other state party networks. Removing allied groups in the party only network increases the constraint scores for competitive candidates because competitive candidates are less connected without them.

Constraint scores for uncontested candidates also increase in Colorado, Pennsylvania, and Oklahoma. These Republican candidates must receive a substantial number of donations from allied groups. Removing the groups drops some uncontested candidates’ number of connections and, therefore, their role as a broker in the party network.

In these box plots, we find some strong evidence that Democratic and Republican candidates with low constraint scores, or brokers, tend to be competitive candidates. Party actors are redistributing funds to the candidates that will most likely help the party win more seats – competitive candidates. Thus, it appears that state party actors adopt party-centered allocation strategies. This is quite clear in states with competitive chambers and elections (Colorado, New Mexico, and Iowa). Therefore, this analysis provides some initial evidence for Hypothesis 2, which proposes that party actors in states with competitive elections will adopt party-centered contribution strategies. However, we actually find support beyond Hypothesis 2 because actors seem to be donating in an effort to help the party in some of the less competitive states as well (North Carolina and Pennsylvania).
In each state, several uncontested candidates are leaders that raise and contribute large sums of money. As also expected, due to their role as major funders\textsuperscript{81}, uncontested candidates also tend to be brokers in some states (especially in New Mexico and North Carolina). However, in the more competitive states (Colorado, New Mexico, Iowa), the distribution on uncontested candidate constraint scores is usually larger than competitive candidates for both parties. Therefore, although some uncontested candidates are influential in the network and brokers, a higher proportion of competitive candidates tend to have low constraint scores in these states.

To further evaluate Hypothesis 2, I run a fractional logistic model to test the impact of candidate competitiveness on constraint scores. When calculated in igraph, constraint scores are bound between zero and one. This makes some statistical models inappropriate because we need a model that can analyze proportions.\textsuperscript{82} However, constraint scores can equal one, making a fractional logit a more appropriate model for analyzing this relationship than other options like beta regression (Baum 2008; Papke and Wooldridge 1996).

With a fractional logit model, we assume that scores of zero and one are low or high proportions that ‘accidently’ result in a value of zero or one. In Stata, we can use generalized linear models (glm) with a binomial distribution and a logit link function to estimate the fractional logit model. The logit link function performs a logit transformation on the predicted scores of the dependent variable in order to obtain a

\textsuperscript{81} For example, NM Speaker W. Ken Martinez gave over 40 donations and PA Majority Leader Mike Turzai donated over 20 contributions in the 2012 election, which is well over the average number of donations in each state (8 in NM, 6.5 in PA).

\textsuperscript{82} For example, using linear regression is inappropriate because it may result in predictions beyond zero and one.
normal distribution. This quasi-parametric model then examines how the independent variables relate to the mean score (Moeller 2013). We can then generate predictions that transform the results back into the appropriate units for the continuous constraint score variable (Baum 2008).

Table 6.1 includes the results for four models: Democratic *ally only* network, Democratic *party only* network, Republican *ally only* network, and Republican *party only* network. In these models, I use the folded competition variable in an effort to see how increasing competitiveness impacts constraint scores.

| Table 6.1: Fractional Logistic Model of 2012 State Legislative Candidate Constraint Scores |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Variables                       | Democratic Ally Only            | Democratic Party Only           | Republican Ally Only            | Republican Party Only           |
|                                 | Constraint Scores               | Constraint Scores               | Constraint Scores               | Constraint Scores               |
| Folded Race Competition         | -1.523*** (0.483)               | -1.464*** (0.460)               | -2.030*** (0.458)               | -1.868*** (0.439)               |
| Incumbency Scale                | -0.412*** (0.102)               | -0.371*** (0.0970)              | -0.641*** (0.103)               | -0.445*** (0.101)               |
| Total Receipts                  | 3.91e-07 (3.16e-07)             | 2.79e-07 (2.94e-07)             | -1.16e-06* (6.51e-07)           |                                 |
| Constant                        | 0.775* (0.443)                  | 0.997** (0.423)                 | 1.565*** (0.423)               | 1.602*** (0.404)               |
| Observations                    | 774                             | 768                             | 799                             | 788                             |

1 The Republican *ally only* network model does not converge when total money raised is included. Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6.1 reports the coefficients, not odds ratios, so they are harder to interpret. However, in all four models, we can see that competition has a significant, negative effect on constraint scores. As races become more competitive, the probability of a high constraint score decreases. In other words, constraint scores decrease as candidates become more competitive. These results also support Hypothesis 2. Competitive
candidates tend to be brokers, demonstrating that they have more connections (i.e., donations) with other party actors. Therefore, party-centered allocation strategies do seem to be dominant in state elections (except in Oklahoma).

Additionally, open seat candidates and incumbents have lower constraint scores than challengers. Thus, open seat candidates and incumbents receive more donations from other party actors. This corresponds to previous research on incumbency status and campaign donations (Casey 2012; Krasno et al. 1994; Powell 2012), so the finding that open seat candidates and incumbents are more likely to be brokers and influential actors in party networks than challengers is not surprising.

Total receipts or total amount raised, which is highly correlated with amounts donated to other candidates (Krasno and Green 1988), does not significantly impact Democratic constraint scores. Although it significantly affects constraint scores in the Republican party only model, the substantive effect of total money raised is almost nonexistent. Hence, total receipts do not provide much insight into candidates’ influence in the party network. Instead, whom candidates contribute to (i.e., connect to) may matter more for gaining influence than how much they contribute in the aggregate to other party actors. Previous studies often use the total amount that members donate to party actors to predict whether they will receive a leadership position. However, these results suggest that using influence in networks to predict future leaders is more appropriate than the total amount that candidates raise or donate.

Figures 6.7-6.10 and Table 6.1 present strong evidence for Hypothesis 2, but we can further evaluate it by plotting the substantive impact of competition on constraint scores. In Figures 6.11 and 6.12, I plot the predicted mean constraint scores by
competition and incumbency status for 2012 Democratic and Republican party actors. I calculated these predicted mean constraint scores from the fractional logit results presented in Table 6.1. I hold candidates’ total amount raised at the mean value for the network\(^{83}\) in these predicted values.

Figure 6.11 plots the predicted mean constraint scores for Democratic and Republican *ally only* networks. As a reminder, candidates become more competitive as the folded race competition variable increase. For both Democratic and Republican *ally only* networks, constraint scores decrease as candidates become more competitive. Very competitive candidates (.9-1) are much more likely to be brokers than non-competitive candidates (.5-.6), especially for open seat candidates and incumbents.

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\(^{83}\) For example, the mean total raised is $106,684 in the Republican *party only* network.
Constraint scores are always lower for open seat candidates and incumbents. The election of open seat candidates and incumbents is important for attaining or maintaining majority status, making them important candidates to fund. Party actors clearly give more donations to open seat candidates and incumbents, resulting in their lower constraint scores. Additionally, incumbents are more likely to distribute resources to other candidates, so incumbents should be the most likely to be brokers.

In Figure 6.12, I plot the predicted mean constraint scores for Democratic and Republican candidates in party only networks. Like in the ally only networks, competitive candidate are more likely to be brokers in party only networks as well. Additionally, open seat candidates and incumbents continue to have lower mean constraint scores than challengers when allied groups are removed form the networks.
The box plots, fractional logistic regression results, and marginal effects plots all demonstrate that competitive candidates tend to have lower constraint scores in party networks. In other words, competitive candidates are more likely to be brokers in state party networks. Party actors do direct their resources to competitive candidates, which ensures that competitive candidates have more connections and serve as brokers in the network. Therefore, since competitive candidates tend to be brokers and influential in party networks, we can conclude that party-oriented allocation strategies are dominant in most states, especially those with competitive elections (Colorado, New Mexico, and Iowa).

The Identity of Party Brokers

Before examining how being a broker impacts candidate success, we need to identify brokers in state parties. From previous research, we know that leaders are more active fundraisers and donors than other legislators and candidates (Cann 2008; Heberlig and Larson 2012; Powell 2012). Through their many contributions, leaders are likely to have more connections to other party actors than other candidates, which will heighten their influence and lower their constraint score. Additionally, formal party committees are frequently among the most central actors in party networks (Herrnson and Kirkland 2013; Koger, Masket, and Noel 2010), making it likely that they will also be brokers. In party networks, brokers are more likely to be formal party committees or legislative leaders (Hypothesis 3).

To evaluate Hypothesis 3, I examine the ten actors with the lowest constraint scores in each state party network. In this section, I focus on the top actors in ally only
networks. By being key brokers in the network, these actors are highly influential. If multiple allied groups are key brokers in political parties, then groups are important for connecting the party. Table 6A.1, in the appendix, contains the full list of top ten influential actors (i.e., the ten actors with the lowest constraint scores) in each state party. This table includes the top actors’ name, their constraint score, the number of their connections in the network (i.e., degree), and their type (e.g., formal party committee, leader, PACs). However, this table makes it rather difficult to compare the types of actors in the top ten across state parties. Therefore, I plot the number of actors by type in the top ten influential actors in each state party. Figure 6.13 includes a general count of the number of formal party committees, officeholders (both state legislators and statewide officeholders), candidates (both legislative and statewide), and groups in the top ten. Figure 6.14 plots the breakdown of top ten actors by leadership, member, and candidate status.
There are several important findings in Figure 6.13. First, there is at least one formal party committee in every state *ally only* network. In every network, the state party committee (e.g., Iowa Democratic Party, North Carolina Republican Party) is one of the top brokers (see Table 6A.1). The other formal party committees among the most influential party actors include legislative campaign committees and state women party committees. The presence of every state party committee in the top ten party actors indicates that formal party committees are key brokers in party networks.

Figure 6.13 also demonstrates that officeholders and candidates are among the ten most influential actors in most state *ally only* networks with officeholders being somewhat more frequent. This finding is reasonable since we expect leaders to be brokers. However, in the Colorado, New Mexico and Oklahoma Democratic networks, there are actually more candidates than officeholders in the top ten. In Colorado and New
Mexico, this might be due to candidates that used their position of influence in the 2012 election to become a leader in the following session. In Oklahoma, there appears to be a lack of influential officeholders in general for the Democrats.

Another interesting finding in Figure 6.13 is that more groups are among the top ten influential actors in Oklahoma than the other types of actors. In previous analyses, we have seen the importance of groups in the Oklahoma party networks. The presence of four groups in the top Republican actors and five groups in the Democratic top ten brokers further demonstrates the key role of groups in connecting and organizing Oklahoma parties. Without these influential allied groups, Oklahoma party networks would be sparser and even less unconnected.

To evaluate the presence of leaders among the top brokers in party networks, I plot the number of legislative leaders in the 2011-2012 session (current leaders), leaders in the 2013-2014 session (future leaders), legislators, statewide officeholders, and candidates in the top ten actors in Figure 6.14. The candidate category includes both statewide and legislative candidates that do not become leaders after the election.

Collecting information on legislative leaders, especially for previous sessions, is often very difficult. In an effort to ensure comparability across states, I include two types of leaders in the analysis. First, the leadership variable includes chamber-level party leaders, including: speaker (lower chamber), president (upper chamber), president pro tempore (if lieutenant governor is president of the upper chamber), majority leader (upper and lower chamber), and minority leader (upper and lower chamber). Finding records of majority and minority whips and other caucus positions are difficult for previous sessions. Additionally, some state legislatures do not have these leadership roles.
Therefore, I include committee chair and vice chair positions as leadership positions. This increases the number of leaders in my sample, while keeping the leadership variable similar and comparable across states.

In Figure 6.14, we see that the type of candidates that are top brokers in *ally only* networks varies across state parties. First, in every state party network, except the North Carolina and the Oklahoma Democratic *ally only* networks, multiple legislative leaders are among the top ten influential actors. This provides some initial evidence than leaders tend to be brokers. By redistributing funds to other party actors, leaders form many connections, which results in a more influential position in the network and a lower constraint score. In most states, more current leaders are in the top ten than candidates that become leaders after the election (i.e., future leaders). It is possible that these future
leaders became leaders because of their influential position in the network. I explore this idea later in the chapter.

When few current or future leaders are among the most influential state allies, other types of candidates account for more of the top ten. For example, four statewide officeholders are in the top ten brokers in the North Carolina Democratic network. In several states without leaders in the top ten, numerous non-leader legislators are brokers. Top North Carolina Republican actors, for instance, includes four legislators and four candidates. At least two non-leader candidates are among the top actors in every state party except the Colorado Republican and the Pennsylvania Democratic networks. Candidates do tend to have a higher degree, or number of connections, than party committees and groups (see Figures 5.33-5.35), so it seems reasonable that some non-leader candidates would be brokers.

Figures 6.13 and 6.14 provide a brief overview of the most influential brokers in state parties. From these figures, we have some initial evidence that formal party committees and leaders are frequently brokers in state parties. To further evaluate Hypothesis 2, I examine the constraint scores of current leaders in the next section.

Party Brokers and the Path to Legislative Leadership

In social networks, the influential position of brokers provides them with an advantage in seeking promotions and other rewards (Burt 1992, 2000, 2005). In state legislatures, legislators often compete for leadership positions. Leadership positions are desirable because they bring fundraising advantages and control over valuable resources (Richman 2010; A. Rosenthal 2008). Due to the fundraising benefits that accompany
leaders, many members expect leaders to donate to them and the party caucus (Powell 2012). Thus, as discussed previously, I expect that formal party committees and legislative leaders are more likely to be brokers than other party actors (Hypothesis 3).

I also examine how party structure affects the success of candidates. In this project, I focus on the path to legislative leadership.\textsuperscript{84} Recent research finds that members who are active in redistributing funds more often become leaders than members less engaged in fundraising and donating (P. R. Brewer and Deering 2005; Cann 2008; Currinder 2003, 2009). However, the results in Table 6.1 demonstrate that the amount that an actor donates does not really impact their influence in the network (i.e., their constraint score). Drawing upon findings on structural holes, I posit that, instead of simply the amount donated, an actor's connections through their contributions to party actors are important for understanding the path to leadership. Therefore, I expect that actors with positions of influence within the party network (i.e., is a broker) will be more likely to win leadership positions due to their connections. \textit{Brokers in the party network are more likely to become leaders than non-brokers} (Hypothesis 4).

In an effort to examine the validity of using influence in the network, or brokerage, to study legislative leadership, I examine the proportion of current and future leaders with high constraint scores (i.e., low influence in the network). About 10% of existing leaders have high constraint scores (over 0.5) in the Democratic and Republican \textit{ally only} networks. The percentage is slightly higher in the \textit{party only} networks, but still less than 15% of leaders have high constraint scores. The equivalent percentages are slightly higher for future leaders. 13% of future leaders in \textit{ally only} networks and 20% of

\textsuperscript{84} In the future, I plan to use this approach to study other types of legislative success like bill passage.
future leaders in *party only* networks have high constraint scores. While 10-20% are substantive portions of the population, most leaders do have low constraint scores.

If we remove Oklahoma, these percentages are even lower.\(^{85}\) Without Oklahoma, less than 10% of existing and future leaders in *ally only* networks have a high constraint score. Additionally, after removing Oklahoma, the percentages of existing and future leaders with high constraint scores in *party only* networks decrease to 9% and 14% respectively. From these calculations, we know that most leaders, whether they are current or future leaders, have relatively low constraint scores. That few leaders have high constraint scores provides some initial evidence that leaders tend to be brokers and that influence in party networks may be important for being a leader. I examine both these possibilities in depth throughout this section.

**Party Brokers: Existing Leaders.** The preceding sections provide some initial evidence that legislative leaders in the 2011-2012 session tend to be brokers in the 2012 election. To further evaluate Hypothesis 3, I compare the distributions of legislative candidate constraint scores by chamber and majority status in *party only* networks. I focus on *party only* networks in this section because allied groups do not vote or select legislative leaders.\(^{86}\) Therefore, it is more relevant to analyze the relationship between network

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\(^{85}\) Throughout the previous analyses, Oklahoma repeatedly appears to have weak party networks that rely heavily on allied groups to connect the party. Oklahoma also has a much higher percentage of leaders with high constraint scores, which drives the percentage of leaders with high constraint scores up. For example, 80% of Democratic future leaders and 50% of Republican future leaders have constraint scores over .5 in the *party only* network, which is much higher than other states.

\(^{86}\) It is possible that some candidates are influential in the party network through their connections with allied groups. Therefore, in the chapter appendix, I include the
influence and leadership status for actors that make leadership decisions. The equivalent distributions for *ally only* networks (Figures 6A.9-6A.12) confirm the findings presented in Figures 6.15-6.19.

I separate House and Senate candidates because I expect the relationship between leadership and brokerage to be stronger in lower chambers. In lower chambers, there are more leadership positions to allocate. Additionally, the legislative process in lower chambers often provide more resources to leaders (Cox and McCubbins 1994, 2005; Rohde 1991). Therefore, House candidates may be more motivated to contribute resources to other party actors. I also separate candidates by majority and minority status. Majority status brings more advantages and resources, particularly fundraising advantages (Cox and Magar 1999; Cox and McCubbins 1994, 2005; Herrnson 2009; Schlesinger 1994). Leaders in the majority may have more resources and incentives to contribute extensively to other candidates, heightening their influence in networks and lowering their constraint score. The expectations may be lower for minority party candidates for legislative office, diminishing the relationship between leaders and constraint scores in those chambers.

Thus, the following figures contain two density plots. The top plot includes candidates currently in the majority in their chamber, while the bottom plot is the distribution of scores for candidates in the minority. Like the distributions presented earlier in this chapter, the area under the curve represents the probability that an actor will a range of constrain scores.
One-tailed two-group t-test confirms that the mean constraint score of current leaders is statistically and significantly smaller than the mean constraint score of non-leaders.

Figure 6.15 contains distribution plots of constraint scores for House Democratic candidates. In this figure, the distributions of constraint scores for existing leaders and non-leaders are similar for both majority and minority candidates. For both leaders and non-leaders, the mode of the distribution is around 0.2, a relatively low constraint score. However, the peak starts higher and stays higher until about 0.4 for leaders. Therefore, current leaders have a higher probability of having a lower constraint score (0-0.2) than non-leaders. Additionally, for both majority and minority House Democratic candidates, one-tailed t-tests confirm that leaders have a statistically significant lower mean
constraint score than non-leaders. Leaders do have a higher probability of being a broker than non-leaders.

**Figure 6.16: Distribution of 2012 Senate Democratic Constraint Scores by Leadership and Majority Status in Party Only Networks**

* One-tailed two-group t-test confirms that the mean constraint score of current leaders is statistically and significantly smaller than the mean constraint score of non-leaders.

I plot the distributions of Senate Democratic candidates’ constraint scores in Figure 6.16. In these distributions, like the House Democratic distributions, current leaders have a higher probability of having a lower constraint score than non-leaders. This is very clear for candidates running in states where the Democratic Party is in the minority in the Senate. This finding is surprising since I expected the relationship between leaders and network influence to be weakest for Senate candidates in the
minority party. Again, one-tailed t-tests confirm that the mean constrain score of current leaders is statistically lower than non-leaders’ mean constrain score for Senate candidates in the majority and minority. These results also confirm that leaders are more likely to be brokers than non-leaders.

![Figure 6.17: Distribution of 2012 House Republican Constraint Scores by Leadership and Majority Status in Party Only Networks](image)

*One-tailed two-group t-test confirms that the mean constraint score of current leaders is statistically and significantly smaller than the mean constraint score of non-leaders.*

In Figure 6.17, we move to the distribution of House Republican candidates’ constraint scores. For House Republicans in the majority, current leaders have a higher probability of having a lower constraint scores (0-0.2) than non-leaders. The mode for
leaders (0.1) is also lower than the mode for non-leaders (0.2). Existing leaders are clearly more likely to be brokers than non-leaders.

This pattern is somewhat true for House Republicans in the minority. However, the mode for leaders’ constraint scores is now at 0.2, instead of 0.1. Although House Republican leaders in the minority do tend to have lower constraint scores than non-leaders, they are more likely to have higher constraint scores than Democratic leaders in the minority party. Like the Democratic candidates’ distributions, t-tests confirm that House Republican leaders (both in the majority and minority party) have a significantly lower mean constraint score than non-leader candidates.

Figure 6.18: Distribution of 2012 Senate Republican Constraint Scores by Leadership and Majority Status in Party Only Networks
* One-tailed two-group t-test confirms that the mean constraint score of current leaders is statistically and significantly smaller than the mean constraint score of non-leaders.

Finally, Figure 6.18 includes the density plots for Republican candidates for the upper chamber. For Senate Republicans in the majority, current leaders have a higher probability of having a low constraint score than non-leaders. The mode for current leaders is at 0.175, while the mode for non-leaders is at 1. A one-tailed t-test confirms that Senate Republican leaders in the majority have a significantly lower mean constraint score than non-leaders.

However, this relationship is not present for Senate Republicans in the minority. Non-leaders actually have a higher peak at lower scores than leaders. Apart from very low constraint scores (under 0.04), leaders have a higher probability than non-leaders in having moderate constraint scores (0.4-0.7). Additionally, a one-tailed t-test does not find a statistically significant difference between the mean constrain score for leaders and non-leaders. This may be due to stronger seniority systems in these chambers or the presence of fewer leadership positions.

In these density plots, we find more evidence supporting Hypothesis 3. Apart from Senate Republicans in the minority, leaders in the 2011-2012 are more likely to be brokers than candidates in the 2012 election. This relationship is very clear for leaders in the majority, which also matches expectations. Somewhat surprisingly, leaders in the minority party also usually have a higher probability of being a broker (i.e., having a low constraint score) than non-leaders. Parties in the minority often have fewer resources and more difficulty fundraising (Cox and Magar 1999), so the strong relationship between leadership and brokerage is somewhat unexpected. However, this gives us even more confidence that leaders are influential and key actors in party networks.
Party Brokers: Becoming a Leader. Being a legislative leader brings many advantages, including more resources and power (Richman 2010; A. Rosenthal 2008). Attaining and maintaining a leadership position is a goal for many legislators. Historically, seniority played a major role in the allocation of leadership positions, especially committee chair roles (Heberlig and Larson 2012). However, now in order to become a leader, Congressional members must now redistribute money to other party actors (P. R. Brewer and Deering 2005; Cann 2008; Currinder 2009; Heberlig and Larson 2012; Kanthak 2007).

Despite these findings, I expect that whom candidates contribute to may matter more than how much they contribute to party actors. In Table 6.1 and the accompanying analysis, I find that total receipts have minimal impact on candidates’ constraint scores. Previous research finds that network brokers are more likely to receive promotions (Burt 1992, 2000). Therefore, I propose using candidates’ influence in the network (i.e., constraint scores) to examine the path to legislative leadership. I expect that brokers, or candidates with lower constraint scores, will be more likely to become leaders than other candidates (Hypothesis 4).

To test this hypothesis, I create a binary dependent variable that indicates whether a 2012 state legislative candidate becomes a leader in the 2013 session. Due to the binary nature of the dependent variable, I use logistic regression models to evaluate the impact of candidate characteristics, including constraint scores, on the probability of a candidate becoming a leader. Additionally, I include state fixed-effects in an effort to account for state-specific factors that may influence the impact of constraint scores on the

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87 Dependent variable = 1 if candidate becomes a leader, dependent variable = 0 if candidate does not become a leader
probability of becoming a leader, such as differences in legislative professionalism or the level of money in state elections.

The main variable of interest in the following models is candidates’ constraint scores. I expect that the probability of becoming a leader will decrease as constraint scores increase. In addition to constraint scores, I include several other candidate-level variables in the logistic regression models. If reelected, existing legislative leaders are likely to remain leaders. Therefore, I include a variable that indicates whether the candidate was a leader in the 2011-2012 session. Additionally, I include the candidate-level variables examined above: the candidate’s competitiveness as measured by the folded race competition variable, whether they are an incumbent (now a binary variable), and the candidate’s total receipts. Table 6.2 presents the results of the logistic regression models for Democratic and Republican ally only and party only networks.

Table 6.2: Logistic Regression Model of the Likelihood of Becoming a Legislative Leader in the 2013 Legislative Session with State Fixed Effects

<table>
<thead>
<tr>
<th>Variables</th>
<th>Democratic Candidates</th>
<th>Democratic Candidates</th>
<th>Republican Candidates</th>
<th>Republican Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ally Only</td>
<td>Party Only</td>
<td>Ally Only</td>
<td>Party Only</td>
</tr>
<tr>
<td>Constraint Score</td>
<td>-1.089**</td>
<td>-0.946**</td>
<td>-1.663***</td>
<td>-1.530***</td>
</tr>
<tr>
<td></td>
<td>(0.492)</td>
<td>(0.461)</td>
<td>(0.365)</td>
<td>(0.367)</td>
</tr>
<tr>
<td>Existing Leader</td>
<td>2.525***</td>
<td>2.514***</td>
<td>2.091***</td>
<td>2.188***</td>
</tr>
<tr>
<td></td>
<td>(0.300)</td>
<td>(0.302)</td>
<td>(0.277)</td>
<td>(0.281)</td>
</tr>
<tr>
<td>Folded Race Competition</td>
<td>-0.550</td>
<td>-0.602</td>
<td>-1.436**</td>
<td>-1.385**</td>
</tr>
<tr>
<td></td>
<td>(0.655)</td>
<td>(0.656)</td>
<td>(0.585)</td>
<td>(0.587)</td>
</tr>
<tr>
<td>Incumbent(^2)</td>
<td>2.108***</td>
<td>2.121***</td>
<td>1.402***</td>
<td>1.391***</td>
</tr>
<tr>
<td></td>
<td>(0.298)</td>
<td>(0.298)</td>
<td>(0.263)</td>
<td>(0.263)</td>
</tr>
<tr>
<td>Total Receipts</td>
<td>-1.76e-07</td>
<td>-2.36e-07</td>
<td>-1.30e-07</td>
<td>-1.23e-07</td>
</tr>
<tr>
<td></td>
<td>(5.66e-07)</td>
<td>(5.89e-07)</td>
<td>(1.82e-07)</td>
<td>(1.81e-07)</td>
</tr>
<tr>
<td>Observations</td>
<td>774</td>
<td>768</td>
<td>799</td>
<td>788</td>
</tr>
<tr>
<td>Number of States</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

\(^1\) Model includes only state legislative candidates
\(^2\) Binary variable indicating whether the candidate is an incumbent

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
In the results in Table 6.2, constraint scores have a statistically significant, negative impact on the probability of becoming a leader in all four models. As candidate’s constraint scores increase, the likelihood of them becoming a leader in the following session decreases. Therefore, brokers (i.e., candidates with low constraint scores) are more likely to become a legislative leader than non-brokers. This provides some strong evidence supporting Hypothesis 4.

Several other candidate factors also significantly impact the probability of becoming a leader. First, existing leaders (leaders in the 2011-2012 session) are much more likely to become leaders again in the 2013 legislative session. Additionally, being an incumbent running for reelection in the 2012 election significantly heightens the probability of being a leader in the following session. Finally, in the Republican models, candidates in competitive races are less likely to become leaders. Leaders often tend to be candidates in safe races (Hogan 2004; Holbrook and Tidmarch 1993), so this finding is not particularly surprising. However, it is interesting that this variable is significant for Republicans but not Democrats.

To better evaluate the impact of a candidates’ influence in the party network on becoming a leader, I plot the predicted probability of becoming a leader by network type in Figure 6.19. In these plots, we can see how the likelihood of becoming a leader in the 2013 session varies by candidates’ constraint scores for existing leaders and non-leaders. While candidates’ constraint score and existing leader status varies, I calculate these predicted probabilities for incumbents in a competitive race with the total receipts held at the mean. Thus, by calculating these predicted probabilities for incumbents, I hope to better demonstrate the effect of constraint scores on becoming a leader.
In Figure 6.19, we see that the probability of becoming a leader tends to decrease as candidates’ constraint scores increase. This is especially true for non-leaders. Existing leaders tend to always have a relatively high probability of becoming a leader. However, the probability of becoming a leader for Republican existing leaders does decrease as constraint scores become high. In general, candidates with low constraint scores (i.e., brokers) in the 2012 election party network are about 20% more likely to become a leader in the 2013 legislative session than candidates with high constraint scores.

Therefore, from Table 6.2 and Figure 6.19, it is clear that brokers are more likely to become leaders than non-brokers. Candidates can translate influence in the party electoral network into power in the legislature. This is an important finding for several reasons. First, this demonstrates that electoral politics impact legislative politics. Specifically, candidates’ connections in the party network affect their ability to become
influential and attain leadership positions in legislatures. Moreover, this analysis further validates the use of social network analysis and structural holes theory to examine candidates’ roles in political parties and how that influences their success beyond elections.

In the previous logistic regression models, I include state fixed-effects to account for state-level factors that may influence the likelihood of becoming a leader. Chamber-specific differences, like the number of leadership positions, may also have an impact. Instead of adding chamber fixed-effects, which would result in a very small number of observations for some models, I separate Democratic and Republican candidates by chamber. Additionally, I separate candidates by whether their party holds a majority or minority of seats before the 2012 election. As discussed previously, candidates in the majority have more incentives to redistribute to candidates. Thus, I expect a stronger relationship between constraint scores and the probability of becoming a leader for majority candidates.

Tables 6.3 and 6.4 include the results for logistic regression models of the probability of becoming a leader by chamber and majority status for Democratic and Republican party only networks. I focus on party only networks in this analysis because candidates and party committees are the relevant actors for selecting leaders, not allied groups. Moreover, the results in Table 6.2 are quite similar for ally only and party only networks.

Due to the small number of states included in this research, some of the chamber-majority/minority groups analyzed in these tables are quite small. For example, there are only two Senate chambers with a Democratic majority before the 2012 election. The
model, therefore, includes only 53 observations. Therefore, we should evaluate results in Tables 6.3 and 6.4 as preliminary. However, they do provide some supplementary tests of the impact of constraint scores on the likelihood of becoming a leader.

Table 6.3: Logistic Regression Model of the Likelihood of Becoming a Leader in the 2013 Legislative Session by Chamber and Majority Status with State Fixed Effects: Democratic Party Only Network

<table>
<thead>
<tr>
<th>Variables</th>
<th>House Candidates Minority</th>
<th>House Candidates Majority</th>
<th>Senate Candidates Minority</th>
<th>Senate Candidates Majority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constraint Score</td>
<td>0.295</td>
<td>-1.597*</td>
<td>-2.772**</td>
<td>-1.042</td>
</tr>
<tr>
<td></td>
<td>(0.726)</td>
<td>(0.905)</td>
<td>(1.339)</td>
<td>(1.683)</td>
</tr>
<tr>
<td>Existing Leader</td>
<td>3.359***</td>
<td>1.571***</td>
<td>3.435***</td>
<td>2.375**</td>
</tr>
<tr>
<td></td>
<td>(0.619)</td>
<td>(0.563)</td>
<td>(1.015)</td>
<td>(0.964)</td>
</tr>
<tr>
<td>Folded Race Competition</td>
<td>-1.270</td>
<td>-2.425*</td>
<td>0.780</td>
<td>-1.972</td>
</tr>
<tr>
<td></td>
<td>(1.051)</td>
<td>(1.473)</td>
<td>(2.939)</td>
<td>(2.288)</td>
</tr>
<tr>
<td>Incumbent(^2)</td>
<td>19.15</td>
<td>2.519***</td>
<td>1.156</td>
<td>0.594</td>
</tr>
<tr>
<td></td>
<td>(1.849)</td>
<td>(0.510)</td>
<td>(1.043)</td>
<td>(0.914)</td>
</tr>
<tr>
<td>Total Receipts</td>
<td>-2.30e-06*</td>
<td>7.39e-06**</td>
<td>2.62e-06</td>
<td>-2.19e-06</td>
</tr>
<tr>
<td></td>
<td>(1.33e-06)</td>
<td>(3.65e-06)</td>
<td>(2.81e-06)</td>
<td>(4.75e-06)</td>
</tr>
<tr>
<td>Observations</td>
<td>356</td>
<td>217</td>
<td>130</td>
<td>53</td>
</tr>
<tr>
<td>Number of States</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

\(^1\) Model includes only state legislative candidates
\(^2\) Binary variable indicating whether the candidate is an incumbent
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6.3 includes the logistic regression results for 2012 Democratic party only candidates by chamber and majority status. In three of the four models, as expected, constraint scores negatively impact the probability of becoming a leader. However, the coefficient for constraint scores in the House candidates in the majority model is only significant at the .1 level. Surprisingly, the coefficient for Senate candidates in the majority is not statistically significant. This model only includes 53, a relatively small sample size, which may partially explain this lack of a significant relationship between constraint scores and the probability of becoming a leader. Furthermore, Colorado Senate Democrats, one of the two groups included in the Senate majority model, lost their
majority status in the 2012 election. This dramatically reduces the likelihood of Colorado Democratic Senators becoming a leader, also contributing to the insignificance of constraint scores in the model.

The results for Democratic House candidates in the majority best meet our expectations, which is the situation for which we would expect to find the strongest results. Brokers, existing leaders, and incumbents are all more likely to become leaders. Less competitive candidates, or safe candidates, also have a higher probability of becoming a leader in the following session. Finally, raising more money has a significant, but very small, impact on the likelihood of becoming a leader.

Table 6.4: Logistic Regression Model of the Likelihood of Becoming a Leader in the 2013 Legislative Session by Chamber and Majority Status with State Fixed Effects: Republican *Party Only* Network

<table>
<thead>
<tr>
<th>Variables</th>
<th>House Candidates</th>
<th>Senate Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minority</td>
<td>Majority</td>
</tr>
<tr>
<td>Constraint Score</td>
<td>-1.634*</td>
<td>-1.377***</td>
</tr>
<tr>
<td>Existing Leader</td>
<td>1.139*</td>
<td>2.524***</td>
</tr>
<tr>
<td>Folded Race Competition</td>
<td>-2.184</td>
<td>-1.367*</td>
</tr>
<tr>
<td>Incumbent²</td>
<td>0.975*</td>
<td>1.582***</td>
</tr>
<tr>
<td>Total Receipts</td>
<td>9.97e-07</td>
<td>4.09e-06**</td>
</tr>
<tr>
<td>Observations</td>
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1 Model includes only state legislative candidates
2 The model will not converge with folded race competition included, so I drop the variable in this model.
3 Binary variable indicating whether the candidate is an incumbent
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6.4 presents the logistic regression results for 2012 Republican candidates by chamber and majority status. In three of the four models, constraint scores negatively
impact the likelihood of becoming a leader in the 2013 session as expected. Also as expected, in these three models, existing leaders and incumbents are more likely to become leaders. As expected, both models including candidates with majority status have stronger results than for candidates in the minority.

Surprising, results are very different for Republican candidates for the Senate with minority status. Existing leaders are more likely to become leaders, but constraint scores positively impact the probability of becoming a leader. If incumbents were significantly more likely to become leaders, then we could posit that a strong seniority system is present in these states, but that is not the case. However, there are only six successes (i.e., becoming a leader) in the Republican Senate Minority model, which might be contributing to the odd results.

Although the results in Tables 6.3 and 6.4 are somewhat preliminary due to the small number of observations in some models, these tables do provide more evidence supporting Hypothesis 4. When candidates have majority status, especially House candidates, they can heighten their probability of becoming a leader by becoming an influential actor in the party network, such as being a broker. Again, these models demonstrate that candidates’ positions in the party electoral network influence their success in the legislature, specifically attaining a leadership position.

**Conclusion**

In this chapter, I explore how a candidate’s position in the party network can impact their career after the election. In this analysis, I demonstrate that party committees and leaders are more likely to be brokers than other party actors. This finding confirms
that influence in party networks tends to correspond to party actors’ power and influence outside of the election, which further validates using social network analysis and structural holes to study party networks.

Additionally, I find that candidates with influential positions in the network (i.e., brokerage positions) are more likely to become leaders in the legislative session following the election than other candidates. This finding is important because it demonstrates that the position of actors in the party electoral network impacts their success and career in the legislature. The Iowa Republicans refusing to donate to party committees may want to rethink this decision if they are interested in being a legislative leader in the future.

Finally, I examine the type of allocation strategies adopted by parties in this chapter. Using candidates’ constraint scores and competitiveness, I find that, like Congressional parties, state parties tend to adopt party-centered contribution strategies. When contributing to other party actors, state party committees and candidates direct their resources to competitive candidates. Although party networks are still rather sparse and unconnected, clearly party actors are cooperating to win more seats and achieve party goals.
Figure 6A.1: Distribution of Constraint Scores for 2010 Colorado Networks

- Ally Only Constraint Scores
- Party Only Constraint Scores

Legend:
- Democratic Party
- Republican Party
Figure 6A.2: Distribution of Constraint Scores for 2010 New Mexico Networks

- Ally Only Constraint Scores
- Party Only Constraint Scores

Legend:
- Democratic Party
- Republican Party
Figure 6A.3: Distribution of Constraint Scores for 2010 Iowa Networks

Ally Only Constraint Scores

Party Only Constraint Scores
Figure 6A.4: Distribution of Constraint Scores for 2010 North Carolina Networks

Ally Only Constraint Scores

Density

Democratic Party
Republican Party

Party Only Constraint Scores
Figure 6A.5: Distribution of Constraint Scores for 2010 Pennsylvania Networks

Ally Only Constraint Scores

Density

0.0 0.2 0.4 0.6 0.8 1.0
0.0 0.2 0.4 0.6 0.8 1.0

Democratic Party
Republican Party

Party Only Constraint Scores

Density
Figure 6A.6: Distribution of Constraint Scores for 2010 Oklahoma Networks

Ally Only Constraint Scores

Party Only Constraint Scores

- Democratic Party
- Republican Party
Figure 6A.7: Distribution of Constraint Scores by Democratic Candidate Competitiveness in the 2010 Election for Ally Only Networks
Figure 6A.8: Distribution of Constraint Scores by Republican Candidate Competitiveness in 2010 Election for Ally Only Networks
Figure 6A.9: Distribution of 2012 House Democratic Constraint Scores by Leadership and Majority Status in Ally Only Networks

Majority Party Constraint Scores*

Minority Party Constraint Scores*

Current Leader
Non-Leader
Figure 6A.10: Distribution of 2012 Senate Democratic Constraint Scores by Leadership and Majority Status in Ally Only Networks

Majority Party Constraint Scores*

Minority Party Constraint Scores*

Legend:
- **Current Leader**
- **Non-Leader**
Figure 6A.11: Distribution of 2012 House Republican Constraint Scores by Leadership and Majority Status in Ally Only Networks

- Majority Party Constraint Scores*
- Minority Party Constraint Scores*

**Density**

- **Current Leader**
- **Non–Leader**
Figure 6A.12: Distribution of 2012 Senate Republican Constraint Scores by Leadership and Majority Status in Ally Only Networks

- **Majority Party Constraint Scores**
- **Minority Party Constraint Scores**
<table>
<thead>
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<th>State</th>
<th>Party</th>
<th>Name</th>
<th>Constraint Score</th>
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<td>Leader</td>
<td>Current &amp; Future</td>
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<td>GOP</td>
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Table 6A.1: Top Ten Actors in State Party *Ally Only* Networks
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<thead>
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Chapter 7: Conclusions

Campaigns, including state legislative campaigns, are more professional and cooperative than those of twenty or thirty years ago (Abbe and Herrnson 2003; Dulio and Garrett 2007; Holbrook and La Raja 2013; J. Ward 2014; Willis 2014). For example, state candidates and party committees now frequently hire consultants to run their campaigns. Additionally, like national campaigns, state parties and candidates are using data modeling to more effectively and efficiently reach voters.

The role of parties in elections is shifting with these changes in campaigns. The campaigning and fundraising efforts of political parties and candidates are now frequently interlinked (Desmarais et al. 2014; Holbrook and La Raja 2012; Ward 2014; Willis 2014). For example, Texas state legislators, including Texas Representative Trey Martinez Fischer, are using their own campaign infrastructure (e.g., email lists, Twitter account) to request donations to the state party committee. This increasing cooperation of party committees and candidates in campaigns motivated me to explore whether state legislative campaigns are still candidate-centered. I expected campaigns to be less candidate-driven due to this growing sharing of resources among party committees and candidates.

In this project, I do find evidence that statewide and state legislative candidates now cooperate with the broad party organization at fairly high levels. In addition to providing financial and campaign support to candidates, party committees share and transfer resources to other party committees, presumably in an attempt to help elect candidates and achieve party goals. However, my results also demonstrate that party organizations still center around candidates. Candidates are central in most party electoral
networks with party committees and allied groups providing them with funding. Despite a substantial level of sharing and transferring resources among party actors, candidates are still a major organizing entity in state elections. The discovery that party actors now cooperate extensively in state elections, while remaining centered around candidates, is important for updating our view of party organizations.

In an effort to evaluate the preceding analyses in a comprehensive manner, I examine how my results address, conflict with, or build upon previous party research or entrenched ideas about parties in the following section.

**Political Party Organizations in the 21st Century**

Political parties are major actors in American politics (Holbrook and La Raja 2013). Studying the organization and role of parties in elections and legislatures is important for understanding state politics. Although a difficult subject matter to research, scholars have been researching and attempting to measure and understand party organizations since the mid-20th century. Although our current parties substantively differ from preceding iterations, parties continue to structure American politics, especially elections. In addition to highlighting some interesting changes to party organizations, the research conducted in this dissertation demonstrates how parties continue to be key political actors.

**Structure of Party Organizations.** Studying political parties is difficult at least partly because defining the concept is challenging. Theories of political parties frequently differ in how they conceptualize and measure party organizations. For example, Cotter et al.
(1989) and Gibson et al. (1983, 1985) measured party organizations by the existence and resources of formal party committees (e.g., state party committees, legislative campaign committees). More recently, however, scholars conceptualize and define parties as coalitions or umbrella organizations that involve more actors than the formal party committees (Herrnson 2009; Holbrook and La Raja 2013; Parigi and Sartori 2014; Schwartz 1990). With social network analysis, we can actually implement this conceptualization of parties as coalitions in our analysis.

Despite the movement towards a coalitional theory of parties, many scholars continue to view party organizations as hierarchical structures with the state committees on top and the local party committees at the bottom (Hershey 2013; Holbrook and La Raja 2013). Alternatively, some scholars argue that American parties are stratarchical with each committee or unit autonomous from the others (Carty 2004). These approaches draw on the definition of political parties as including only formal committees. However, even some definitions of parties as coalitions assume the organization involve a ranked order of power (for example, Herrnson 2009). Interestingly, in this dissertation, I do find some evidence that state parties are hierarchical. The connections among state party actors are largely hierarchical in structure with the state committee being the central actor in almost every network. This is true for both Democratic and Republican parties. Therefore, although the party coalition includes other actors than formal committees (i.e., candidates, allied interest groups), there is still a hierarchical structure to the organization.

Parties have remained relevant in elections by adapting their role and activities in campaigns and becoming a more service-oriented party (Aldrich 1995; Herrnson 2010;
Holbrook and La Raja 2013). By providing essential campaign services to candidates (e.g., polling, campaign management, media), parties have become increasingly important actors again in elections, especially the national organizations. In this research, I do find evidence that state party organizations remain relevant actors in elections. In many states, formal party committees, especially the state party committee, are the most central actors in the network. This central role of formal party committees indicates that they are active in fundraising and redistributing resources to other committees and candidates.

The level of cooperation (i.e., connectedness) varies across state parties. For example, the average number of connections is 10 in the Colorado Democratic party only network and only 3.1 in the equivalent network in Oklahoma. Thus, while party actors in Colorado redistribute resources at a high level, cooperation is much lower in Oklahoma. Previous studies of party activities and organization find that party organizations institutionalize and become more active as competition increases (Hamm and Harmel 1993; C. S. Rosenthal 1995; J. R. Stanley 1992). Results in my dissertation provide additional evidence that parties are more active and cooperative when competition is higher. In states with higher levels of competition, especially more competitive chambers, party networks are more connected (Colorado, Iowa, New Mexico). Thus, competition influences the structure of party networks, which demonstrates the importance of electoral context on political organizations.

However, despite a higher level of connectedness in some states, party networks are relatively sparse in general. The density of these networks is rather low compared to other social networks. This means that a low proportion of all possible connections
actually exist in the party network. Most party committees and candidates contribute to a relatively small percentage of other party actors. This suggests that state parties are still fairly weak organizations in terms of candidate cooperation. As candidates continue to redistribute more resources to other party actors, party committees will continue to increase in connectedness and density. Regardless, state parties may always be less dense than many social networks due to the limited nature of campaign resources (Brunell 2005; Gierzynski 1992).

Allied interest groups are key actors in state party networks. After removing allied groups, several networks are quite small and unconnected, including both Oklahoma parties. One clear result in this project is the importance of interest groups to party coalitions, which corroborates previous research on party networks (Desmarais et al. 2014; Grossmann and Dominguez 2009; Skinner et al. 2012, 2013). This further confirms the importance of conceptualizing and studying parties as coalitions that includes allied interest groups. If we only study parties as formal committees and candidates, then we misconstrue the composition and structure of parties and may underestimate their role in elections.

Although all the networks are sparsely connected, parties are surprisingly similar within a state. Historically, the institutionalization of one party stimulates the other party to develop and increase its activity level (Hamm and Harmel 1993; Harmel and Hamm 1986; C. S. Rosenthal 1995; J. R. Stanley 1992). I find very similar Democratic and Republican party networks within these states. Apart from Colorado, both parties tend to have the same level of connectedness and density in a state. Competition is high in Colorado. If the Republican Party coalition is motivated to increase their activity and
cooperation in elections by the more connected Democratic network, perhaps both parties will have similar levels of network connectedness in the future.

The previous research on party networks focuses more on the location of actors in the network and the general structure of connections. The closure of structural holes can increase network efficiency by connecting clusters and ensuring the spread of resources throughout the network (Burt 1992, 2005). By examining the type of connections in party networks, I measure the presence of structural holes in party connections. I find that many structural holes exist in party networks. Structural holes are difficult to identify, especially in a systematic manner. Therefore, my analysis is a rough estimate. Nonetheless, my research demonstrates that structural holes exist in party networks, making structural holes theory an appropriate method for studying parties.

In summary, state political parties are becoming cooperative coalitions of party committees, candidates, and interest groups. Yet, many candidates are still not engaged with or contributing to the party. This results in a fairly sparse network for most state parties. As the demand for money continues to increase in state elections (Powell 2012), it is likely that more candidates will redistribute funds to more candidates and party committees. Thus, we should see party networks grow more connected and denser over the next decade or so. Currently, however, state parties are still rather loose organizations in which allied interest groups are key to connecting party actors.

*Party Actors.* Resources are limited in elections and campaigns (Brunell 2005; Gierzynski 1992; Heberlig and Larson 2012; M. Jewell and Morehouse 2001). Therefore, party actors, including candidates, must make difficult decisions when contributing to other
party members. In a pure candidate-centered campaign system, we would not expect candidates to use their personal resources to help other candidates and party committees. Instead, candidates would donate to other party actors in the pursuit of their own individual goals or contribute to friends and personal allies. However, scholars do find that party actors often adopt contribution strategies that help the party win more seats and win a majority (Brunell 2005; Damore and Hansford 1999; Heberlig and Larson 2012; Herrnson 1986; G. C. Jacobson 1985; Schecter and Hedge 2001). For example, in their research on Congress, Heberlig and Larson (2012) find that members adopt party-oriented strategies that involve directing substantial resources to candidates in competitive races, which are important to win to capture a majority of seats.

Like Heberlig and Larson, I find that candidates and other actors in state parties tend to use party-centered allocation strategies. Despite the sparseness of state party networks, candidates and formal party committees tend to redistribute their resources to competitive candidates in an attempt to support the party’s goals. Even though party organizations are fairly weak in some regards, party actors are cooperating to achieve party goals, especially winning a majority.

When studying campaigns as candidate-centered, our evaluation of the most influential or relevant actors in funding elections may be incorrect. While my research suggests that campaigns are still candidate-oriented in many respects, analyzing candidates separately may underestimate the impact of groups and committees in the larger party organization. This may be especially troublesome if we only measure the total donated by an actor in an election, which may all go to one or two party actors. By
using social network analysis to study state parties, I more effectively measure the role of actors in an election and can more precisely identify the most influential actors in a party.

Like previous research (Holbrook and La Raja 2013; M. Jewell and Morehouse 2001), I find that state party committees are the most influential actor, or one of the top most influential actors, in every state party. State committees usually have more resources (Jewell and Morehouse 2001), so this finding is relatively unsurprising. More interesting is that current legislative leaders\textsuperscript{88} are also brokers in almost every party network. This finding confirms that actors with power in the legislature are influential in party networks. The correspondence of power in electoral party networks and the party outside of elections validates the use of social network analysis and structural holes theory to study the linkages between electoral and legislative politics.

When studying the path to legislative leadership, scholars find that candidates must now be active fundraisers and contributes to become and remain a leader (Cann 2008; Currinder 2009; Heberlig and Larson 2012). I also find that brokers are more likely to become leaders in the subsequent legislative session. This supports the previous research in that candidates must actively contribute to other candidates and party committees to become a leader. However, I find that the amount donated is not the major driving factor. Instead, it is whom candidates connect to (i.e., contributed to) that matters when seeking a leadership position. This finding is important because it provides some initial evidence that the position and power of actors in the party electoral network affects their career and success in the legislature.

\textsuperscript{88} Existing or current legislative leaders are legislators that are leaders in the session preceding the election.
Contributions

Comparing State Party Networks. Although scholars have examined national party networks (Grossmann and Dominguez 2009; Koger et al. 2009; Skinner et al. 2012, 2013) and party networks in a single state (Masket and Shor 2011; Masket 2009, 2011), this is the first comparative analysis of state parties using social network analysis. With a comparative approach, I am able to explore differences in party structure across states and electoral contexts, such as varying levels of competition. Additionally, by conducting comparative research, I can test questions at the candidate level while incorporating electoral and legislative contextual variables in the analysis.

Collecting and cleaning the data to undertake this comparative study was difficult and required immense time to prepare. Through several funding sources, I was able to create this original dataset. Thus, my data is also an important contribution to the study of state politics, political parties, and elections and campaigns. Although many campaign finance data sources exist, my dataset that includes a single id for all actors and social network measures may be useful for other scholars studying state political parties or other aspects of state politics.

The measurement of political party networks varies across research. Scholars frequently do not discuss or explain the inclusion or exclusion of actors in the network. By using data from different sources, some of which includes all donations in an election, I can compare different network types and creation criteria to determine the most appropriate network composition for this study. I find the selection criteria used to create networks matters immensely. The inclusion or exclusion of actors, especially non-allied
interest groups, affects network size, structure, and activities of parties. In future research on party networks, scholars should be transparent and prudent about their decisions regarding the actors included or excluded in the network.

**Linkages between Elections and Legislatures.** Political scientists usually study electoral and legislative politics separately. While this may help develop a deeper understanding of each arena, these independent research tracks fail to provide insight into how electoral and legislative politics are connected. Political parties structure both elections and legislatures (Aldrich 1995; Holbrook and La Raja 2013), making it important to study both arenas concurrently. The increasing use of social network analysis helps examine the structure and role of parties in both elections and legislatures without separate analysis. For example, I find that candidates with influential positions in the electoral party network are more likely to become a legislative leader. This demonstrates the interconnectedness of elections and legislative politics. Therefore, by examining how the electoral organization of party actors affects legislative behavior and outcomes, I am able to develop a more comprehensive understanding of political parties and candidates than research that studies these arenas separately.

**Structural Holes Theory and Political Parties.** In this research, I apply structural holes theory to state political party organizations. Although rarely used in political science research, I demonstrate the appropriateness and utility of this social network theory for studying and understanding political parties, state elections, and state legislative politics. Structural holes theory permits me to compare the structure of party networks across
states to better understand how their structures do and do not vary, which is missing from current research. In addition to providing a method to make valid comparisons across states of party organizations, structural holes theory allows me to test existing research questions with a new, more comprehensive approach. For example, I study whether party actors adopt party-centered or individualistic allocation strategies when donating to other party actors. Perhaps the biggest contribution of demonstrating the relevant and applicability of structural holes theory is the new research questions that I can pursue that will help us better understand parties in American politics. In the following section, I discuss some of these new research questions, or new approaches to existing research questions, that I will pursue in the future that are possible through structural holes theory.

Future Expansion and Research Plans

As briefly discussed in the previous section, structural holes theory is useful for studying how the electoral party network connects to or impacts legislative politics. I only briefly test the linkage between the two arenas in this dissertation with my analysis of candidates’ position in the network and their likelihood of becoming a leader. In this section, I outline several paths that I will pursue using the theory and approach developed in this project that will expand the scope of this research.

Electoral-Legislative Connections. In Chapter 6, I examine the impact of candidates’ position in the electoral party network on their success in becoming a legislative leader. I find fairly strong evidence that candidates that are influential in the party’s campaign network are more likely to become leaders in the following legislative session. However,
these results are rather preliminary due to a small sample size for some categories (e.g., Democratic candidates for the Senate with majority status) and a focus on only one aspect of legislative politics. To further evaluate the connections between party networks and candidate success, I will expand both my sample of states and the legislative variables examined.

First, by adding several more states, I will increase the variation present in my data on key variables, such as majority status, chamber competition and the influence of money in the legislature. Although my findings in Chapter 6 provide strong evidence that candidates’ influence in the electoral party network impacts their likelihood of becoming a legislative leader, the results are less convincing at the chamber-majority status level. Adding more data should strengthen these results, thereby increasing our confidence in the generalizability of my research.

To future explore the relationship between influence in electoral party networks and attaining a leadership position, I will separate my analysis by leadership type in future research. Chamber partisan leadership positions (e.g., Speaker of the House, Minority Leader, Whips) and committee chair leadership often differ in the selection process and power level. In most legislative chambers, the Speaker of the House or president of the Senate (or equivalent chamber leader) assigns committee chairs and vice-chairs (Erickson 2014). The entire chamber or party caucus, on the other hand, participates in and votes on chamber and caucus leadership races. Therefore, having the support of many other party actors in the electoral network may be important when seeking chamber or caucus leadership positions. Thus, in future research, I will test if the
relationship between being a network broker and the probability of becoming a leader is stronger for chamber and caucus leadership positions than committee chair appointments.

I will also apply this approach to other aspects of the legislative process. Legislators have more goals than power, including crafting and passing good public policy (Aldrich 1995; Herrnson 2009; Schlesinger 1984, 1994). Like attaining legislative leadership positions, I expect that influential candidates in the electoral party network will be more likely to successfully pass their bills. Moving legislation through the entire legislative process takes an immense amount of work and time (A. Rosenthal 1998, 2008). By being a party broker, candidates have access to more party actors, which ensures they have more allies to support their legislative proposals. First, I expect influential party candidates to have more co-sponsors on their bills than other candidates. Additionally, I propose that party brokers will be more likely than non-brokers to have their bills or amendments to bills passed by their chamber. By testing these expectations, I will further expand our understanding of the connections between electoral and legislative arenas.

To test my expectations regarding heightened legislative success for party brokers, I will collect bill history data. Few public datasets on bill histories, including the number of co-sponsors and bill passage, exist and collecting this data is a major time commitment. Therefore, I will initially study the connection between candidates’ positions in the electoral party network and their success on legislative proposals in one state. If the results are promising, I will expand the study to additional states.

Currently, my research focuses on candidates. In future research, I will also explore how interest groups’ positions in party networks impact their gains and success in
the legislature. Many interest groups contribute to party committees and candidates for access or favorable policies in the legislative session (Baumgartner and Leech 1998; Bonica 2013; Fellowes and Wolf 2004; Hall and Wayman 1990; Richter et al. 2009; Wright 1990). Other groups, on the other hand, ally with party committees to help the party win majority status or extend their seat share (Herrnson 2009; Schlesinger 1994; Skinner et al. 2012). Are allied groups more successful than other interest groups in getting their preferred policies passed? For example, are ally groups in party networks more likely to have their endorsed or co-sponsored legislation passed than other interest groups that frequently author or co-sponsor bills? Measuring the influence of interest groups on legislation is difficult, but perhaps with increasing transparency measures in many states, conducting this study will be feasible in the near future.

Progressive Ambition and Network Position. Candidates tend to display different types of ambition. Some candidates pursue power or legislative success within their institution (Currinder 2003; Maestas 2003; Schlesinger 1994). For these candidates, exploring the connections between their network position and their success in attaining legislative leadership positions or passing policy is incredibly useful. However, other candidates are motivated more by progressive ambition (Abramson et al. 1987; Hibbing 1986; Maestas et al. 2006; Schlesinger 1994). In other words, a desire for higher office drives these candidates. I believe my approach to studying candidate success may also be valuable for studying the pursuit of higher office by state legislative candidates.

Studying progressive ambition is difficult. Scholars usually measure progressive ambition after candidates enter a race for a higher office. By using structural holes theory
to identify key actors in the party network, I can predict state legislative candidates that are likely to run for statewide or congressional office. For example, in the Texas Democratic party network, Senator Wendy Davis jumped into the top ten most influential actors in the 2012 election from the top seventy-five influential actors in the 2010 election. This large increase in influence suggests that she became an informal party leader and was likely to seek higher office in the future, which she did in 2014 when she won the Democratic nomination for governor. Thus, my approach provides a method for predicting candidates with progressive ambition, something currently difficult to accomplish. By measuring major gains in constraint scores to identify candidates likely to run for higher office, I will test this possibility more systematically in the future.

Gender and Party Networks.

Drawing from structural holes theory and the homophily principle, I can expand my research to explore the presence and identity of gender and racial clusters in party networks (i.e., potential network groups). We know that actors often group together by gender and race in social networks (Ibarra 1992, 1995; Marsden 1988; McDonald 2011; McPherson et al. 2001), often referred to as ‘birds of a feather flocking together’. Clustering by gender and race may have large ramifications for the success and careers of minority candidates by constraining their opportunities. Continued underrepresentation of women and racial minorities in most political offices makes identifying and understanding the roadblocks facing minority candidates important (Burrell 1996; Carroll and Sanbonmatsu 2013; Lawless and Fox 2005; Windett 2011).
In future projects, I will examine the existence of both gender and racial potential network groups. However, the first step will be to study gender homophily in party networks. When young, females tend to have smaller, more homogenous networks than do males (Shrum, Cheek, Jr., and Hunter 1988). Gender homophily decreases to some degree for adult friendship networks, but non-familial networks (including political discussion networks) and workplace relations continue to be highly segregated by gender (Brass 1985; Huckfeldt and Sprague 1995; Ibarra 1992; Kalleberg et al. 1996; Kleinbaum et al. 2013; McDonald 2011; McPherson et al. 2001).

The electoral activities of party actors are strategic with winning elections a major goal. This may decrease the homophily within party networks to some degree. However, female officeholders and candidates are likely to cluster together like women in other workplace relations (Kleinbaum et al. 2013; McDonald et al. 2009; McPherson et al. 2001). Women view fundraising as extremely important in elections (Powell 2012), which may prevent some potential female candidates from entering races (Carroll and Sanbonmatsu 2013; Jenkins 2007; Lawless and Fox 2005). To combat this situation, many women’s groups and political organizations work to ensure women candidates have the support necessary to run. However, the activities of groups dedicated to the election of female candidates, such as EMILY’s List and state women’s PACs (e.g., Annie’s List in Texas), may actually heighten the tendency for female candidates to cluster together through their targeted support of female candidates (La Cour Dabelko and Herrnson 1997; Francia 2001).

Party recruitment is more important for motivating women to pursue office than potential male candidates (G. F. Moncrief, Squire, and Jewell 2001; Osborn 2012;
Female legislators report that encouragement and support (especially financial support) was crucial to their decision to run and their success (Carroll and Sanbonmatsu 2013). They consider state party and legislative campaign committee support an important component of their fundraising efforts (Jenkins 2007). Additionally, female candidates or minority candidates may focus on supporting each other for strategic purposes, resulting in them clustering together. If female candidates receive most of their support from the same few sources (or each other), they may lack the connections within the broader party network necessary for achieving both electoral and legislative goals.

From this research on homophily and female candidates, the potential for candidates and other party actors in state party networks to segregate into groups by gender seems quite feasible. If female legislators are clustered together through their campaign funding sources, it is unlikely they will have access to the larger network or be brokers. Candidates that fail to connect with the larger party or campaign network will be at a disadvantage and may be less successful in their career (electorally or in the legislature). If true, then party network structure may be contributing to the underrepresentation of female state legislators. Additionally, if female candidates are less likely to serve as brokers in party networks, they may be heavily disadvantaged when seeking leadership positions or attempting to pass legislation.

We know political parties are a major factor in the electoral and legislative behavior for minority groups like females (Osborn 2012), making it important to account for party when studying their success. By using structural holes theory to explore the existence of potential network groups within party networks, I can accomplish this and
study how the network structure affects the electoral and legislative success of female candidates and legislators.

**Concluding Thoughts**

Political parties are changing with new campaign innovations and growing demands for funding, which is partly due to more sophisticated campaign technology (Herrnson 2010; Powell 2012). Our ability to study and understand the role and impact of party organizations and networks depends on our ability to measure them. With increased transparency regulations regarding campaign finance transactions and transparency organizations like the National Institute on Money in State Politics, I was able to conduct this study. However, without transparency, understanding the role of party actors and other groups in elections will be difficult. Apart from an academic interest, knowing the activities and influence of actors in elections is important for democratic accountability.

The rules governing campaign finance are usually in constant flux (Malbin 2006; La Raja 2008). Over the past several years, the courts have struck down several major campaign finance regulations, including bans on independent expenditures by corporations (*Citizens United vs. Federal Election Commission*). So far, courts have upheld and supported transparency laws in these decisions, which is encouraging.

Additionally, some state governments are enacting or considering regulations to require the disclosure of dark money\(^{89}\). The Texas Ethics Commission, for example, is considering a requirement that nonprofits disclosures their donors if the group spends more than 25% of all expenditures on political activities (Rauf 2014). California recently

\(^{89}\) Funds spent in an election by groups that do not have to disclosure their donors.
enacted SB 27, which requires groups to disclosure their donors if they meet one of several different spending circumstances, such as spending $50,000 on political activities (McGreevy 2014). For both research and democracy, hopefully this support and infrastructure for government transparency continues.
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