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Connected courts: the diffusion of precedent across state supreme courts

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University of Iowa

CONNECTED COURTS:
THE DIFFUSION OF PRECEDENT ACROSS STATE SUPREME COURTS

by

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ABSTRACT

State supreme courts are autonomous institutions with significant power. Yet, despite this authority, state supreme courts routinely rely on one another to explain why and how they reached their decisions. This puzzle of why state supreme courts cite each other in their opinions led me to pose two questions. First, under what conditions do state supreme courts cite other states supreme courts? And second, to whom do they turn for guidance? To answer these questions, I propose a new theory for evaluating state supreme court citations, the social learning model. I borrow policy diffusion's learning mechanism and I pair it with network theory and methods to explain peer-to-peer state supreme court citations practices. I argue that courts are social actors who interact, influence, and learn from one another, and the citations are communications by and between the courts.

To model citations between courts, I apply a temporal exponential random graph network analysis model or TERGM. TERGMs simulate the evolution of the state-to-state citation network by including aspects of both the courts and the network structure. I argue that only by understanding how networks and issue areas evolve can we begin to understand how courts and justices make decisions. The network approach to citations specifically tests these endogenous relationships, it also directly models the complex dependencies of citation networks.

My findings demonstrate the courts became more connected over time and no single state supreme court leader emerges. I find that citations are endogenous; what

one court does affects other courts. I also discover that the area of law matters a lot and it is insufficient to pool all legal issues into a single model. Finally, state supreme courts do not cite state supreme courts who look like them. Overall, the evidence suggests the courts are learning from each other. The courts' written language discloses the mechanism. Courts state their own case law does not provide a solution to the question presented and they must seek answers elsewhere. Additionally, the courts do not always cite the same state, as we would expect from emulation. Together, these findings demonstrate that state supreme courts are connected, they learn from one another.

PUBLIC ABSTRACT

State supreme courts are autonomous institutions with significant power. Yet, despite this authority, state supreme courts routinely rely on one another to explain why and how they reached their decisions. This puzzle of why state supreme courts cite each other in their opinions led me to pose two questions. First, under what conditions do state supreme courts cite other states supreme courts? And second, to whom do they turn for guidance? To answer these questions, I propose a new theory for evaluating state supreme court citations, the social learning model. I borrow policy diffusion's learning mechanism and I pair it with network theory and methods to explain peer-to-peer state supreme court citations practices. I argue that courts are social actors who interact, influence, and learn from one another, and the citations are communications by and between the courts.

My findings demonstrate the courts became more connected over time and no single state supreme court leader emerges. I find that citations are endogenous; what one court does affects other courts. I also discover that the area of law matters a lot and it is insufficient to pool all legal issues into a single model. Finally, state supreme courts do not cite state supreme courts who look like them. Overall, the evidence suggests the courts are learning from each other. The courts' written language discloses the mechanism. Courts state their own case law does not provide a solution to the question presented and they must seek answers elsewhere. Additionally, the courts do not always cite the same state, as we would expect from emulation. Together, these

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CHAPTER 1
INTRODUCTION

On June 22, 2013, Patience Paye called 9-1-1 requesting police assistance.[1] When the police arrived, Patience was standing on the front steps of her house. During the conversation, the officer asked Patience whether she had consumed any alcohol. Patience admitted to drinking earlier that day and agreed to provide the officer with a breath sample for analysis. The sample produced a 0.267 blood alcohol concentration, over three times the legal limit. The officer arrested Patience for public intoxication.

Under Iowa law, a person cannot be intoxicated or simulate intoxication in a public place. To support a charge of public intoxication, the state must prove two elements. First, the state must establish that a person was intoxicated or simulated intoxication. Second, the state must demonstrate that the act occurred in a "public place." When faced with the question of whether a single-family residence's front steps constituted a "public place," the Iowa Supreme Court did not have an answer. The court had never decided that precise legal question before. To interpret the statute and answer the question, the court first looked at what the legislature intended by "public place." The court could only determine that the legislature enacted the law to prevent nuisance and protect the public. The information was helpful, but not conclusive.

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[1] *State* v. *Paye*, 865 N.W.2d 1 (Iowa 2015).

Next, the court turned to its case law. A prior Iowa case made a distinction between the front steps of an apartment building and the front steps of a single-family residential house, resting its decision on a person's ability to restrict access. The court continued its analysis, differentiating between an implied invitation to enter a business and an implied invitation that allows a neighbor to enter a single-family residence. To support its final determination, the Iowa Supreme Court cited California and West Virginia's legal definitions of a public place ("Clearly . . . a barber shop is a public place.")[2] In the remainder of its opinion, the court cited statutes and cases from Kentucky, Oregon, Missouri, Indiana, California, Florida, and Texas to justify its decision that Patience's front steps did not constitute not a public place.

Iowa is not the only state to cite other states' cases in its opinions. Even though it is not mandatory, all state high courts engage in this practice. From their sample of sixteen state supreme courts, Friedman et al. (1981) maintain that state supreme courts cite other state supreme courts' opinions once for every two citations of their own from 1870–1970. This begs the question: why do state high courts look outside their jurisdictional borders?

Courts' norms and practices may be one reason. The Wisconsin Supreme Court states that the principle of stare decisis binds the court to previous decisions "unless a compelling reason exists to overrule it."[3] Utah provides a suggestion as to what might constitute a compelling reason: there is no previous decision to constrain its behavior.

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[2] *In re Zorn*, 381 P.2d 635, 636 (Cal. 1963).

[3] *Wenke* v. *Gehl Co.,* 682 N.W.2d 405, 412–13 (2004).

The Utah State Supreme Court states, "When faced with an issue of first impression, this court often looks to other jurisdictions for guidance."[4] Patience Paye's case in Iowa is an example of an issue of first impression; the Iowa Supreme Court lacked existing caselaw to guide its decision-making process. Without existing precedent to bind itself, the Iowa Supreme Court looked to other states for direction.

1.1 Learning in the Courts

Judges control very few items in the judicial system, the most import aspect in the judge's control is the legal reasoning process. The legal reasoning is the courts' way of structuring its thinking to make "good" choices; it is the explanation for why and how the court ruled in favor of one party. In it, the court provides a rationale for why it made the trade-offs and choices it did. The legitimacy of a decision rests upon the court's justification (Patty and Penn 2014). To justify the decisions it reaches, courts cite its own prior decisions. State courts also cite other courts' cases.

When a court faces a case for which it does not have the tools to address the legal question, the court is granted latitude in the way in which it resolves the case. The court is no longer bound by its own cases. I argue that in the absence of authoritative caselaw, courts look to other courts. Decisions made across the judicial system influence the choices the court makes. In other words, the courts' interaction produces case outcomes. A state supreme court looks to another state supreme court or federal court to learn. This project disentangles the mechanisms through which

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[4]*Stone Flood & Fire Restoration* v. *Safeco Insurance Co. of America*, 268 P.3d 170, 177 (2011).

the legal decisions spread or diffuse from court to court. It examines how courts reach the decisions they do in the face of incomplete information.

The judiciary operates analogously to the legislature in one crucial manner: both are policymakers. Just as legislatures make laws, courts also make laws. Often the legislature will pass a law that offers a general framework for the behavior that is permitted or unacceptable, but does not provide the specifics. The story at the beginning of this paper is one such example. The Iowa Supreme Court attempted to interpret the public intoxication law passed by the legislature. But, because the legislature did not say anything about how public should be defined, the court made that determination. Courts' pronouncements become "the law" (Shapiro 1970).

Although legislatures make laws, judges developed many of the rules, norms, and policies that govern our behavior (Shapiro 1970). For example, much of the law of torts and contract is based on English common law, which is judicially-created law based upon societal norms. That is, common law is based upon customs and precedent. Judge-made tort law defines who is responsible for causing another person to suffer harm or loss, such as slip and fall injuries, assault and battery, and trespass. In contract law, common law requires that we have a court-imposed duty to honor contracts; it also protects individuals from a person unjustly enriches herself, that is, when she keeps a benefit not intended as a gift at the expense of another person.

The sheer volume and complexity of the court's decisions, and time pressures force judges to make decisions on the basis of incomplete information (Downs 1957; Iyengar 1993). In the face of uncertainty, judges and lawmakers search for methods to

process complex cognitive tasks. State lawmakers learn from the experience of their neighbors. Courts are no different. They, too, learn from other courts' decisions. They choose among alternatives that have a track record of success in other courts (Walker 1969). Learning from other courts' innovations can simplify complex decisions (Berry and Berry 2007).

1.2   Looking Ahead

The present study addresses these important issues by analyzing the evolution of precedent across state supreme courts from 1960–2010. The areas of law and the states provide analytical leverage to test mechanisms. The states have various institutional rules and designs, and competing political forces (see e.g., Brace and Hall 1995). The states and the court system provides the necessary variation (Brace, Hall and Langer 2001).

The process by which state supreme courts make their decisions is the focus of this project. I study how judges go about reasoning and making decisions by analyzing the courts' citations. I also examine the process by which citations are formed between two courts. As others have noted, courts' decisions are "systematically conditioned" by prior courts' decisions, and that conditioning is critical to citation patterns (Simmons, Dobbin and Garrett 2006, 787). I apply policy diffusion research to analyze when and why courts rely on other court's published decisions. At its core, this dissertation studies precedents' diffusion across the states.

This study conducts a comprehensive analysis of horizontal policy diffusion

between state supreme courts. I hope to make at least two contributions in this study. First, the study of subnational U.S. courts is an underutilized research area ripe for theoretical and methodological contributions. The impact of state supreme courts in particular has received little attention. It is important to incorporate state supreme courts more fully into the judicial politics literature. Although scholars study state supreme courts considerably less than the U.S. Supreme Court, state supreme courts exert considerable influence over their citizens' lives and state politics and policy. State supreme courts are the final word on a large number of cases.

My dissertation's second contribution is that it brings the extensive policy diffusion literature to a new problem: the development of the law across the United States. It does so with new methods and new data. I borrow from the policy diffusion literature to develop a theory of precedent that treats the citation as a social process. Critical information flows between and among the courts in the network; the courts interact as they make decisions. How courts use that information—as a means of learning about other outcomes—explains how the case law evolves over time. The state supreme courts, the federal appellate courts, and the U.S. Supreme Court operate simultaneously, interacting by citing each other's cases.

To model the process of formations of citations between courts, I apply an over time exponential random graph network analysis model or TERGM. TERGMs simulate the evolution of the state-to-state citation network by including aspects of both the courts and the network structure. Only by understanding how networks and issue areas evolve can we begin to understand how courts and justices make decisions.

In the following chapters, I seek to answer when, to whom, and why state supreme courts look outside their borders for legal guidance.[5] Chapter 2 positions my project among the judicial decision-making literature, and Chapter 3 sets forth the theoretical model. In Chapter 4, I set forth the research design and data. In Chapters 5 and 6, I empirically test the predictions from my theoretical model. Chapter 5 analyzes citation patterns over time. It applies a series of network centrality measures to determine whether there is a leader among the state supreme courts. Chapter 6 examines horizontal diffusion patterns by evaluating the conditions for citations. Finally, I present some concluding remarks in Chapter 7. The results in this dissertation demonstrate that the courts share power when they learn from one another.

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[5]I use the term "state supreme court" as a synonym for court of last resort, recognizing that the highest court in New York and Texas is the court of appeals.

CHAPTER 2
JUDICIAL DECISION-MAKING

Courts' written legal opinions are a function of judges making decisions. Each case offers many choices: which previous cases are relevant, what legal rules to apply, and who will prevail. How courts make those decisions, the sources relied on, and the justifications used are important considerations for explaining courts' decisions (Baum 2012). Although this dissertation focuses on courts' written opinions, at its core this project examines judicial decision-making. To understand the context in which judges make decisions, I explore courts' use of precedent. I consider when courts cite their own case law and when courts cite out-of-state precedent.

Positioning this project among the judicial decision-making literature, this chapter examines a number of factors that influence court decisions. It begins with a discussion of precedent. I discuss how courts use cases to reach case outcomes. From there, the chapter focuses on two dynamics of judicial decision-making theories: justices' internal values and the application of legal rules. Throughout, I discuss what the various approaches to judicial decision-making suggest about the potential for diffusion, and state supreme courts in particular. While courts frequently rely on *other courts'* cases to justify its own decisions, current theories do not account for this tradition. I argue that the courts' use of precedent is an enduring practice that the current theories alone are unable to explain.

2.1   The Role of Precedent

Nearly every single case published by American courts cites an earlier case. Courts' prior cases encompass its norms, practices, and settled law. Imbued with meaning, the cases contain the court's doctrine. Precedent provides guidance to courts on how to decide cases with similar legal issues and facts. Literally interpreted, precedent means something that happened before. Legal precedent can be described as a court having a pre-existing relationship with the cases it previously decided. Courts are connected and bound by the decisions that were made before the present case.

Similarly, *stare decisis* is a common law principle that requires courts to adhere to legal rules and reasoning established in earlier cases. In other words, it means that the court is bound by precedent or prior court decisions.[1] It requires that lower courts in the same jurisdiction and the same court to interpret and apply laws in the same manner. The U.S. Supreme Court recognized precedents' value when it remarked: "The obligation to follow precedent begins with necessity, and a contrary necessity marks its outer limit . . . we recognize that no judicial system could do society's work if it eyed each issue afresh in every case that raised it."[2]

Precedent offers a number of advantageous qualities, it provides transparency, predictability, internal consistency, stability, clarity, and application of law as written (Fuller 1964). In 2015, the Supreme Court extolled the virtues of *stare decisis* as the foundation of the rule of law. Elena Kagan, writing for the majority, noted "*stare*

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[1] *Stare decisis* is a Latin phrase meaning that which has been already decided should remain settled.

[2] *Planned Parenthood of Southeastern Pennsylvania* v. *Casey*, 505 U.S. 833 (1992).

decisis promotes the evenhanded, predictable, and consistent development of legal principles, fosters reliance on judicial decisions, and contributes to the actual and perceived integrity of the judicial process."[3] A court's decision influences not only the parties to the current case, but also future litigants in that court's jurisdiction and in other jurisdictions.

The court shapes its argument by citing precedent as authority (Braman 2009). Precedent provides the justification for reaching the outcome and the citations represent relationships between the courts. Two factors affect the power of precedent. First is the court's jurisdiction or the citizens to whom it responds. A decision's power depends upon the issuing court. This will be explained further in Section 2.1.2. Second is context: how the other jurisdiction considers the court and its decisions (Gerhardt 2008). The evaluation of other courts also motivates this dissertation.

The best precedent an attorney or court can cite is a prior judicial opinion with facts similar to those in the pending case, decided by a court whose decisions are binding (Gerhardt 2008). If this is true, this presents a puzzle. Why do courts cite non-binding or persuasive decisions? Put another way, why do state supreme courts cite other state supreme courts?

2.1.1 Case Disposition and Legal Reasoning

Two primary elements make up every case, the disposition and the legal reasoning (Hansford and Spriggs 2006). The disposition is the outcome of the case; it

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[3] *Kimble* v. *Marvel Enterprises*, 135 S. Ct. 2401, 2409 (2015). See also *Payne* v. *Tennessee*, 501 U.S. 808, 827–28 (1991).

refers to which party must pay a fine or stop doing some action (in a civil case), or whether a person is guilty of a crime (in a criminal case). The disposition can have considerable financial and punitive consequences for the litigants.

In an appellate court, a court that reviews a lower court decision, the appellate court has a number of actions it can take. It might affirm the lower court, uphold or agree with the lower court. It might reverse the decision and rule for the other party. The court might also vacate and remand a decision, reverse the lower court's decision and send the case back to the court for a completely new trial. In essence, reversing and vacating a decision denotes that the lower court was wrong. Conversely, affirming a decision is the appellate court's way of saying the lower court was correct.

How the judge or the panel of justices reaches their decision is the legal reasoning of the case. There are many ways in which a court can apply legal reasoning. The court could create a rule to apply to the case and explains why it thinks the rule is best, justifying its decision on morality, notions of fairness or justice, or any number of other reasons (Kerr N.d.). Alternatively, if the court in an earlier case addressed the same or similar question, precedent may bind the court. This will be discussed further in the next section.

Courts are limited in how they decide cases. All judicial decision-making theories recognize that case facts limit the sphere of relevant case law, which in turn limits how a case can be resolved. For example, in order for a justice to vote to expand (or restrict) Fourth Amendment search and seizure jurisprudence, an individual party, allegedly harmed by a state actor, must file a case in court. Justices cannot rule on

cases without injured parties. Moreover, the facts of a case limit which parties can bring suit, thus dictating the realm of applicable laws. In such a case, a court would not apply property tort law, for example, because the case does not involve property or a tort.

2.1.2   Mandatory and Persuasive Judicial Precedent

Not all legal opinions are equal. Many factors determine whether the court is bound by precedent as *stare decisis* demands. Precedent can follow two paths: mandatory or persuasive. The courts' relationships with the other courts determine whether the precedent is binding. Simply, when state courts cite other state courts, they are peers with no formal authority over each other; they are not mandated to follow each other courts' decision.

Some judicial opinions impose binding legal decisions from the top down, but are persuasive for other courts (Gerhardt 2008). State courts must follow the decisions of the state's highest court. These binding decisions are also known as mandatory authority, i.e., precedent set by the highest court in their state. For example, if the Minnesota Supreme Court ruled that police officers could not search an arrestee's smartphone without a search warrant, then all lower Minnesota state courts must follow that legal rule as well as the Minnesota Supreme Court itself. That is, a Minnesota Supreme Court decision would bind other Minnesota state courts, but not other state courts or the federal court of appeals.

A court's opinion may also be used as persuasive authority. When courts cite

the opinions of out-of-state courts, or other federal circuits, they are citing persuasive or non-binding authority. Between state courts, the precedent of one court has no formal authority over the other court. For example, if the Massachusetts Supreme Court cites a federal Eleventh Circuit Court of Appeals case, Massachusetts does not have to follow the Eleventh Circuit case. The Eleventh Circuit is not mandatory authority for Massachusetts because the Massachusetts Supreme Court belongs to the First Circuit.

There are varying levels of persuasiveness and some cases are more persuasive than others are. When a court is evaluating the legal factors of a persuasive case, they look at both the legal and factual elements. The primary factor is doctrine, whether the other court applies a legal rule the court wishes to adopt. Another consideration is the degree to which the facts of the two cases are similar. The more factual details the cases share, the more persuasive the argument. Finally, courts also consider the level of the court (supreme court or lower district court), the reputation of the judge who authored the opinion, the stature of the state supreme court, how well reasoned the opinion is, and other contextual and determinations.

Courts look to other courts when faced with a new legal issue or interpretation that the court has not addressed. This is often referred to as an issue of first impression. Cases of first impression occur when the legal issue has not been adjudicated before, such as adjudicating recently passed legislation. Another example is Patience Paye's case in Chapter 1. In such cases, the state has no legal or binding precedent. For guidance on how to decide a case, the court may look to other courts' decisions.

In summary, as courts write their legal opinions, they rest their decision on previous cases or precedent. Sometimes the courts choose cases from other states, even though they are not obligated to cite those cases. This section explained the basic of how cases reach the court and how courts use previous cases in their legal opinions. I now turn to the theories that explain why courts reach the decisions they do.

2.2 Judicial Decision-Making Theories

Two competing paradigms dominate the judicial decision-making literature. One theory asserts that substantive policy outcomes motivate justices. The second tradition emphasizes legal rules and norms. Since most judicial decision-making theories derive from Supreme Court, I, too, begin with the Court. Both theories purport to explain why justices cast their votes and both models focus exclusively on the U.S. Supreme Court. The generalizability of these theories to state supreme courts is questionable in light of their assumptions. Policy diffusion can fill the gaps left by these theories.

2.2.1 Policy Motivated Models

The first tradition includes two models: attitudinal and rational choice (Segal and Spaeth 2002; Epstein and Knight 1997). The attitudinal model originated from the behavioralist movement, which argued that political science is capable of empirical, scientific analysis (Dahl 1993). Judicial behavioralists moved beyond the study of the court as an institution, to individual judges' behavior, specifically the

Supreme Court justices' votes. Professors Segal and Spaeth, the principal advocates of the judicial behavioral approach, argue that scholars can best understand judicial decisions through the attitudinal model.

The attitudinal model contends that judicial votes are the product of the justices' ideological values and attitudes, tempered by factual stimuli of the particular case, as noted above. Attitudinalists treat justices as unconstrained decision makers who cast votes based on policy preferences. Suppose that justices were mapped onto a unidimensional space, where a liberal judge is placed at the left side of the line and a conservative judge is placed at the right end of the line. This model would predict case outcomes based on a justice's location or position in the attitudinal space. For example, a right-of-center conservative judge would vote against abortion rights, while a left-of-center liberal judge would support expansion of national power based on principle of federalism, such as the Affordable Care Act. Justice Thomas, a conservative, votes conservatively and Justice Ginsburg votes liberally because she is liberal (Segal and Spaeth 2002, 86).

Professors Segal and Spaeth argue that precedent and legal rules do not constrain the justices because the justices are not accountable to the public, Congress, or the president. Yet, they build their argument on a number of factors that do not extend to rest of the judicial system, especially state supreme courts. The Supreme Court sits in a privileged position at the top of the judicial hierarchy. Only the Supreme Court can overturn state and lower federal courts. The attitudinal model places the Supreme Court in an elite position, in effect isolating it from the other courts. Al-

though state supreme courts and the U.S. Supreme Court are courts of last resort, state high courts do not have complete control of their docket.[4] A model built on the argument that the court does not have to answer to anyone—the public, Congress, or an executive—has limited utility beyond the Supreme Court. Unlike the Supreme Court, state supreme courts and lower federal courts function in an environment in which courts interact freely, sharing information and citations.

In yet another difference, Supreme Court justices have life tenure and lack ambition for higher office, while most state supreme court judges do not enjoy life tenure and many harbor political ambitions. Due to these features and their position of prominence, Supreme Court justices can "freely implement their personal policy preferences" (Segal and Spaeth 2002, 111). Conversely, state supreme courts have only partial control of their docket, its justices do not have life tenure, and the justices may or may not seek higher office at the conclusion of their term. These factors together suggest that state supreme court justices will not behave consistently with the attitudinal model.

The attitudinal theory is not comprehensive. It is limited to explaining the voting behavior of U.S. Supreme Court justices. Importantly, it does not describe the process justices used to reach their decision. Despite the freedom to vote in any way a justice wishes, there remains an expectation that the justice will explain their vote (Friedman et al. 1981). Justices rationalize their votes by citing precedent, even in

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[4]The U.S. Constitution dictates that the Court has original jurisdiction in a small number of cases, but those cases are relatively rare. U.S. Constitution Article III, Section 2.

the face of their presumed unaccountability. The court decisions' justification suggests another process is taking place, and policy diffusion may provide the mechanism.

Extending my criticism further still, some scholars object to the unconstrained element of the attitudinal model. One critique comes from the rational choice theorists, who contend that institutional forces restrict justices' votes. The rational choice or strategic voting model applies economics theories and methods to political and social interactions. It's premised on the idea that actors possess complete and transitive preferences ordering a series of options. For example, an actor prefers A to B and B to C, but is indifferent between the remaining choices. The model also assumes that the actor chooses the option that maximizes their utility (Riker 1980).

Political scientists applied the rational choice paradigm first to legislators and later to the U.S. Supreme Court. The rational choice model argues that justices are strategic actors who cast votes within the context of others' preferences and the institutional context within which they act (Epstein and Knight 1997; Maltzman, Spriggs and Wahlbeck 2000). Justices switch votes, change their opinions, and join writings that may not reflect their sincere preferences to achieve desired substantive policy goals. For example, a conservative justice may cast a liberal vote to maximize their policy preferences.

While the strategic voting model explicitly takes into account the environment in which justices make decisions, which the attitudinal model does not, it fails to account for the justices' use of citations in their written opinions. This again suggests a potential for policy diffusion to explain the courts use of citations.

2.2.2   The Legal Model

The second judicial decision-making tradition, the legal model, does not con-
centrate on policy outcomes but instead focuses on the manner in which justices make
their decisions. In contravention to the attitudinal model, justices view themselves as
constrained by precedent. This tradition is dominant among the legal academic com-
munity. Judges strictly apply legal rules, principles, rights, and norms. Adherents
regard political considerations as contrary to the decision-making process. The legal
model expects that judges will base their opinions on precedent and "will adhere to
the doctrine of *stare decisis*" (Wasby 1993, 270).

Yet, despite the claim of strict adherence to precedent, readings of any number
of cases suggest that the legal model does not explain all judicial outcomes, even at
the U.S. Supreme Court. For example, when the Court in *Brown v. Board of Educa-
tion* confronted how to overcome *Plessy v. Ferguson*'s infamous "separate but equal"
doctrine,[5] it focused on whether the Fourteenth Amendment granted it the power to
end segregation. Notably lacking in the decision is precedent. Yet, the lack of case
law did not stop the justices. With no precedent guiding it, the Court concluded that
historical and legislative analysis was not enough to reach a conclusion, and instead
examined the issue from the present day importance of education. The Court did not
rely on citations to justify its decision, contrary to the legal model's requirement.

Brown was not the first time the Supreme Court has relied on external au-

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[5]163 U.S. 537, 551 (1896). *Plessy* held that segregation did not violate the Fourteenth
Amendment, and that any "badge of inferiority" due to segregation was the result of the
psychological "construction" that "colored people" themselves attached to the stigma).

thority to support its ruling. The first time the Court did so was in 1905, in *Muller v. Oregon* when the Court upheld a state law that set the maximum number of hours a woman could work in a day to ten hours.[6] Louis Brandeis, as counsel for the state of Oregon, submitted a brief filled with empirical data including medical conclusions, social worker reports, expert testimonials, and factory inspector observations. In contravention of the legal model's assertion of citing case law, the Court relied on the brief's data to support its conclusion that "when women worked long hours, it was destructive to their health and morals" (Chemerinsky 2006, 617–18).

Similarly, the Court in *Lawrence v. Texas* also did not rely on prior binding case law but on secondary sources when it held that states may not prohibit two consenting adults of the same sex from engaging in private consensual sexual activity.[7] As if heralding its holding in *Brown*, the Court stated, "history and tradition are the starting point but not in all cases the ending point . . . ."[8] The Court went on to illustrate a trend among European nations towards invalidating laws prohibiting same-sex sexual relations. The Court cited successful policy implementation before implementing its own version of the policy.

The legal model asserts that judicial outcomes should be a result of the application of legal principles. The examples above illustrate that non caselaw-based sources influence the Supreme Court. The legal model is inadequate to explain the

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[6]208 U.S. 412 (1908).

[7]539 U.S. 558, (2003)

[8]539 U.S. at 572.

reliance on these outside, non-binding justifications.

Despite both Attitudinal and Legal Models' assumptions, even the Supreme Court is not an insulated, solitary actor. Rather, the Supreme Court, just like the state supreme courts, interacts with the environment around it, looking to others for examples and strategies to resolve its dilemmas. Policy diffusion's learning mechanism offers an explanation for why courts interact with others and why they turn to non-binding sources to justify case outcomes.

2.3   Why State Supreme Courts: Heterogeneity

State supreme courts' decisions are legally and politically significant. Legally, the scope of state supreme courts' responsibilities is vast. State courts manage ninety-nine percent of the country's litigation (Hall 2001). State courts of last resort manage cases involving a wide array of legal areas such as family law, civil rights, election law, and tort doctrine. Additionally, state supreme courts are the final authority on death penalty cases as well as attorney and judicial discipline. Politically, state courts' decisions in these cases affect the distribution of wealth and power in the United States (Baum 1997; Glick 1993; Hall 1992). Their decisions also influence actual state policy.

Courts possess conflicting goals and choices. State supreme court caseloads have steadily increased over time. In 2012, the fifty-two state supreme courts had a caseload of over 80,000 cases (Court Statistics Project N.d.).[9] Even with this increase, state legislatures have cut judiciary funding. As a result, there are fewer clerks,

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[9]Texas and Oklahoma each have two courts of last resort, a civil and criminal court.

court reporters, court officers, and other judicial branch staff working to resolve cases (Iowa Judicial Branch 2010). Despite increasing caseloads and reduced staff, the legal problems facing the court and its litigants remain complex.

Among all this, courts must also remain independent, appear accountable, and maintain legitimacy. Just as U.S. Supreme Court justices respond to public mood, so too do state supreme court justices (Cross et al. 2010; Hansford and Spriggs 2006; Erikson, MacKuen and Stimson 2002; McNollgast 1995), and many state supreme court justices are electorally accountable. For example, Pennsylvania trial court judges assess and respond to possible electoral accountability; the judges assign longer criminal sentences as their reelection date approaches (Huber and Gordon 2004).

The courts' work affects both citizens' lives and state politics and policy. While balancing large caseloads, diverse legal areas, budget reductions, and accountability, courts must go about their work and issue opinions. The manner in which the courts render decisions has profound consequences for the litigants and beyond.

2.4   Motivation for Precedent

The study of precedent has received renewed attention from judicial politics scholars. The literature generally takes two approaches. The first focuses on the interpretation of precedent, as described above, and the second aims to quantify precedent and citations. Despite a resurgent focus on quantifying precedent, how courts utilize the law when making decisions remains unclear. And neither approach explains why courts cite their sister courts so frequently. Moreover, the scholarship on citations

offers little guidance because, just like the decision-making literature, the citations research largely focuses on the U.S. Supreme Court and its citations to other Supreme Court cases. The role of precedent in state supreme court decision-making is even less developed. Yet, the law at the state level is even more complex because both federal and state decisions may bind the court.

Another development in judicial politics is attention to courts other than the U.S. Supreme Court, such as sub-national and lower federal courts. Although state supreme courts are studied considerably less than the U.S. Supreme Court, they exert considerable influence over their citizens' lives and state politics and policy and are worthy of scholarly consideration. For example, Kassow, Songer and Fix (2011) study how states supreme courts treat U.S. Supreme Court precedent, focusing on whether the Supreme Court's precedent was positive or negative. Hinkle (2015) analyzes federal appellate courts' impact on states' decision to adopt policies. And Lax (2012) studies judicial hierarchy; he applies formal modeling to examine how higher court judges exert control over lower court decision-making.

Despite this recent shift, most judicial decision-making theories derive from Supreme Court literature. This may explain in part why the judicial decision-making literature is unable to account for the enduring prevalence of precedent. The attitudinal model argues that citations disguise substantive policy preferences. It assumes that citations have no meaningful value. The legal model by itself is inadequate because legal doctrine does not necessitate out-of-state citations. The legal model does not address how precedent can constrain a court outside its own jurisdiction.

Additionally, much of the judicial decision-making literature focuses on ideology to explain justice's votes and case dispositions. The standard methodological approach is to regress an outcome of interest—for example, a judge's vote—on a number of covariates. The variables often include information about the judges, such as their ideology, as well as information about the case, such as the ruling of the lower court. While some scholars have shifted away from studying votes and ideology to incorporating the law as a key explanation in judicial decision-making and to law as a dependent variable (see e.g., Lindquist 2011; Bartels 2009; Hansford and Spriggs 2006; Richards and Kritzer 2002), there remains inadequate attention to the process by which judges reason and justify their decisions.

2.5   Conclusion

The novel contribution of studying citations to out-of-state precedent lies in the fact that each precedent is binding for some judges and persuasive for others. When courts engage in persuasive citations to other state supreme courts, the courts are not required to do so. I argue the courts do so because they are learning from each other.

In the next chapter, I introduce policy diffusion and apply it to the courts. I argue that the courts' written opinions contain information about the process by which judges reach their decisions—that information is contained in its citations to other courts.

CHAPTER 3
THE SOCIAL LEARNING MODEL

A few basic steps comprise decision-making: identify the problem, collect information, analyze the possible courses, and, finally, choose and implement the action. Within these steps, there are two main goals. The first is to make the best possible decision, and to make that decision as efficiently as possible. Complexity and lack of information frequently obstruct these steps. How an individual or organization chooses to address these difficulties directly affects the outcome.

When a person faces a decision but doesn't have enough information to determine which response is best, she searches for ways to achieve the best possible outcome. She engages in decision-making heuristics. One technique she employs is to scan her memory and environment searching for clues to help. She looks for instances in which her friends, family, and others were faced with a similar decision. Their experience helps her learn how to choose among the responses. She transforms their choices to conform to her present situation.

The interaction between the current environment and our observation of others affects how information, ideas, and influence spread among individuals and across groups (Leskoveck, Singh and Kleinberg 2006). When individuals do not have enough information and face a number of alternatives from which to choose, they need guidance. Our peers provide a key source of information. Individuals look to their friends for direction on how to behave.

As the previous chapter indicates, the decision-making process is not unique to

individuals; courts also make decisions after observing others. Legal cases are difficult, that's why the dispute is before the court. To make a decision in the face of uncertainty and incomplete information, courts collect information by looking around them to see what other courts are doing. Courts take this information and choose whether to follow another court or not.

In the chapter that follows, I describe a social network theory of precedent that emphasizes the social interaction—the citations—as the key to revealing the influences on the development of the law. Courts learn by observing the actions of other courts. The courts acquire information and patterns of other courts' behavior, without the cost of implementing the case outcomes. The information shared between the states supreme courts means that the courts are not bound to their jurisdictions (Garrett and Jansa 2015). I argue that the courts' information gathering process includes learning from other courts, and this observation affects the courts' citation choices.

3.1   Learning from Others

It is easy for courts to accomplish the first step in the decision-making process: identify problems and issues. That's because the litigants and parties bring problems and issues to courts for resolution when they file an appeal. The tricky part is developing, generating, and searching for proposed solutions.

To whom and to where courts turn for guidance is critical because their choices become possible solutions to the issue before the court. One source of information is

other courts. Although state supreme courts operate at the top of the judicial hierarchy in their respective states, they are not alone. Courts interact, both among the state supreme courts and across state and federal judicial systems. Courts work together formally by reviewing lower court decisions or implementing higher courts' decisions. They also work together informally by researching and reading each other's opinions. When a court reads another court's decision, they interact. This collaboration influences the courts.

3.1.1   Collaboration Between Courts: Information Exchange

State supreme courts exchange ideas via their written opinions. Courts observe others through legal research and reading other courts' legal opinions. Each time a court researches and reads another court's decision, it is engaging with that court. This interaction creates and shares information among the courts for the purpose of adopting or rejecting the new idea (Rogers 2003).

Communication between the courts is possible because courts "publish" or report their legal opinions. When a court publishes its decision, other courts or parties may cite or rely on the opinion.[1] Published opinions are included yearly in printed regional court reporters and are available almost immediately in electronic legal databases such as Westlaw and LexisNexis.

The court's publication of a case makes collaboration possible. When courts

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[1]Decisions that are not made available by publication are known as "unpublished" opinions. They are also called "unreported decisions" or "unreported opinions." The unpublished opinions resolve the dispute between the parties to the case and are generally public records. Typically, other cases cannot rely on or cite unpublished opinions.

read each other's legal opinions, the opinions expose the courts to a different set of relevant information and stimuli than they possess individually (Huckfeldt 2001; Mutz 2002; McClurg 2003; Sinclair 2012). This exchange exposes courts to information that broadens their awareness and understanding of legal rules and decisions. This process of reading and interacting with other courts' legal opinions influences the courts.

Reading another court's legal opinion (the observation) is the primary influence that drives the citations. The resulting behavior (the citation) occurs because of this interaction. The key is that the environment influences the court making the decision. The court makes decisions as a function of its environment, so that the causal process is not independent. It is a continuous reciprocal interaction between the court and environmental determinants (the other cases). I call this process social learning (adopted from Bikhchandani, Hirshleifer and Welch 1998).

3.1.2 Uncertainty and Incomplete Information

Scholars have long argued that humans are not perfectly rational and have limited information processes (see, e.g. Downs 1957; Lau and Redlawsk 1997; Lupia and McCubbins 1998; Meseguer 2005; Hafner-Burton, Hughes and Victor 2011). Political issues are complex and the time necessary to become informed is often prohibitive, leaving most Americans uninformed (Campbell et al. 1960; Delli Carpini and Keeter 1996). To combat these shortcomings, heuristics permit individuals to process complex information in order to make decisions.

To overcome the lack of information, most people employ some device or en-

gage in some behavior to process information. Downs (1957, 233) offers one solution, he states citizens "will seek assistance from men who are experts in those fields, have the same political goals he does, and have good judgment." Individuals utilize experts and elite cues as a substitute for sorting out the issues themselves. Citizens—and judges—employ shortcuts or heuristics to process information.

Hafner-Burton, Hughes and Victor (2011) find a number of ways in which elites differ: elites select better heuristics when they process complex information, they update their heuristics more effectively, they choose the correct heuristic, and they rely more heavily on their heuristics. Because they are constrained in their ability to obtain and analyze information about all the facts and actors in a case, judges take shortcuts. While both elites and the masses employ information shortcuts, judges differ in how they make decisions. This last difference leads elites to be more efficient at processing information.

Justices confront complex, time-consuming legal decisions. Justices also encounter incomplete information. They engage in these cognitive heuristics every time they write and research an opinion because the heuristics simplify justices' effort. Information shortcuts allow judges to make choices in the face of incomplete information, that is, to reach a decision without data to support it. They do so by looking around and learning what their peers are doing.

Legal research is a search for methods to simplify decision-making. Judges rely on several sources of information when they write an opinion. Among those sources is knowledge of past cases, the factual stimuli, and the law. Legal research examines

the status quo of the law and explores alternatives that are marginally different from the status quo in its and other jurisdictions (Lindblom 1959).

A frequent heuristic judges employ is determining the legal rule. Courts restrict consideration to relevant case law from their own jurisdiction. This step reduces the time judges spend performing legal research and shifts the focus from cases viewed broadly to the relevant legal issues (Zhang and Koppaka 2007). For example, the court limits freedom of speech research to First Amendment cases. This simple process of limiting information to relevant areas illustrates that justices and courts engage in heuristics all the time. This is an accepted and common heuristic.

However, these heuristics are not enough. Courts must resolve cases without full knowledge. When courts do not have their own case law to guide their decision-making, they have incomplete information. A court will interact with another court and use the other states' decisions to provide a solution.

The complexity of the legal decision makes the information processing—the heuristic employed—likely to play an influential role in shaping the outcome. There are many heuristics available, including past experience, expertise, training, and even biological biases (Jones 2001). The other courts' legal reasoning, and its citation of other states, offers courts an informational shortcut. Courts look for other courts and cases and borrow language (in whole or in part) from others. The courts use the other states' decisions to provide a solution.

Courts rely on the information of other courts. This practice is not limited to courts, legislatures engage in this too. Strategic actors offer model legislation to pol-

icymakers to advance their agendas. American Legislative Exchange Council (more commonly known by its acronym ALEC) is one organization that drafts and distributes legislation among state governments. State supreme courts do not need to develop and disburse model case law because the text of their opinions is widely available to their court peers. In a way, state supreme courts provide other courts with model "legislation" simply by the act of publishing their legal opinions.

3.1.3   Seeking Assistance from Peers

Judicial decision-making is similar to other spheres in which actors utilize shortcuts to simplify decisions. Rather than thinking of the state courts as equivalent to the Supreme Court, state supreme courts operate more analogously to state legislatures. Although there are (obvious) differences, courts and legislatures exhibit many similarities. Judges—like legislators and bureaucrats who run governments and organizations—draft policies, make rules, and adopt laws. And, both state legislators and state supreme court justices look to others for guidance.

The context in which justices and legislators make decisions is important; neither judges nor legislators process information in a vacuum. The legislative and judicial environments are political; justices make choices while also considering the preferences of other actors, such as other justices, members of Congress, and the president, as discussed in Chapter 2 (Murphy 1964; Epstein and Knight 1997). The justices' assessment of their environment alters their actions.

In each of the above scenarios, the court and legislature sought solutions to

questions for which they did not have an answer. They turned to their communities to look for an answer. They looked to their peers for help. Courts and states observe what their neighbors, friends, and others in their community are doing. And, the court or legislature selects and transforms one of those observations to accommodate their current needs. They collect parts of behavior they have observed to create or justify new rule adoption. They learn by observing their peers in their community.

3.2   Innovation: Judicial Policymakers

Courts make law. What I mean by this is that when an appellate court reaches its decision, it has two effects. First, the decision becomes immediately binding for the parties to the lawsuit. Second, and more importantly, the court's published decision also establishes a rule—or law—for all citizens in its jurisdiction. For example, an Iowa State Supreme Court decision is authoritative for all residents of Iowa. A Fifth Circuit Court of Appeal opinion affects all residents of Texas, Louisiana, and Mississippi. Those decisions make legal policy by resolving the litigants' substantive and procedural issues. As discussed at the beginning of this chapter, policy is the product of a choice among alternatives, when the choice creates a rule that is binding and enforceable (Segal and Spaeth 2002). Courts make policy, and they are innovators.

Courts make policy by resolving legal disputes. The court's decision, when published, affects the immediate litigants, but it does far more than that. Courts decide contested or unclear legal issues. The question can be both substantive and procedural. For example, the issue may be substantive such as whether an unborn

child can be a "dependent" for purposes of a neglect of a dependent state statute.[2]
Whether under Nebraska's State Tort Claims Act the State of Nebraska may be sued
for contribution as an alleged joint tort-feasor.[3] Or whether an expectant mother can
be a principal or coconspirator to the abortion of her fetus.[4]

The issue may also be procedural. For example, whether a legal error consti-
tutes grounds for a finding of judicial misconduct.[5] Or whether the respondent was
denied due process of law when the five-judge commission refused respondent's re-
quest for a continuance of the hearing?[6] And in apportioning fault among the parties,
whether the trial court erred in apportioning fault between the negligent and inten-
tional defendants where the intentional conduct was the foreseeable risk created by
the negligent nursing home.[7]

In each of the above examples, the court's decision makes law. The courts be-
came innovators by creating solutions where none exists. Judicial innovation, there-
fore, is making a new policy or law (Glick 1970). A consequence of resolving a dispute
between litigants is providing direction to future courts with similar factual stimuli.
They make policy.

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[2] *State* v. *Herron*, 729 N.E.2d 1008 (Ind. 2000).

[3] *Northland Insurance Company* v. *State of Nebraska*, 492 N.W. 2d 866 (Neb. 1992).

[4] *State v. Ashley*, 670 So.2d 1087 (Fla. 1996).

[5] *In re: Quirk*, 705 So. 2d 172 (La. 1997).

[6] *In re: Judicial Campaign Complaint Against Carr.*, 657 N.E.2d 280 (Ohio 1995).

[7] *Eddie Brown Limbaugh* v. *Coffee Medical Center, et al.*, 59 S.W.3d 73 (Tenn. 2001).

3.3 Policy Diffusion

Policy diffusion theory provides the mechanisms by which the courts interact. Although researchers propose a number of diffusion mechanisms, scholars identify four primary mechanisms: emulation, learning, coercion, and competition (Shipan and Volden 2008). My model adopts policy diffusion's learning mechanism and situates it into an interdependent network of courts. I argue that to understand state supreme court judicial decision-making, we must consider the context surrounding court's decision and the mechanisms that explain the adoption of same or similar case law of other courts. Although courts are autonomous, they do not operate independent of each other. When state supreme courts cite courts outside their jurisdiction, they are learning from their peers.

3.3.1 Learning

The process by which a court examines other states' cases and assesses the risk associated with adopting that case's legal reasoning is learning. The court's research ponders the risks and consequences of their decisions. The court considers the decision and conditions that decision on the court and state. The other courts, and their networks, reduce information costs by providing a heuristic.

The adoption of the same or similar policy by one court is not a coincidence. We know diffusion is occurring because the courts' opinions tell us. The court uses language to show the type of mechanism taking place. Courts use the other courts' decisions as justification or legitimization of their own decision. For instance, courts

often assert some version of, "our decision is ok because these other courts agree." The court is asserting that its judicial innovation is acceptable because other states have also made the same or similar decision.

The opinions state that the court is studying, discovering, and acquiring information to render a decision. The Colorado Supreme Court announces that it does not have the answer and must seek it from other courts. "Whether or not Universal Mutual and defendant are joint tort-feasors . . . poses a question which has never been decided in this jurisdiction and consequently cases from other states must be resorted to in arriving at a solution." [8] West Virginia needs guidance from other courts. "We will therefore look to other states to discern principles to guide our decision." [9]

Learning also reduces the perception that the decision is unfair. Learning identifies the existence of similar laws or legal rulings in another state supreme court. State policymakers do this, too. When states introduce new taxes, state legislators draw attention to a neighboring state's similar tax (Berry and Berry 1990). Learning suggests that networks are important for communicating social norms (Beagles, Provan and Leischow 2011).

To justify their decision, courts use language to say that they are not alone; other courts are doing the same thing. For example, New Jersey arrives at a decision only after finding that many courts reached a same conclusion. "Other jurisdictions have interpreted their statutes of repose as beginning upon substantial completion . .

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[8] *Hamm* v. *Thompson, et al.*, 353 P.2d 72 (Colo. 1960).

[9] *Lawyer Disciplinary Board* v. *Stanton*, 760 S.E.2d 453 (W. Va. 2014).

. We agree with the rule applied in those other jurisdictions."[10] Kentucky justifies its finding by claiming that other state supreme courts reached a comparable decision. "Other states considering the problem have adopted a similar approach."[11] Oklahoma, Florida, and Washington rationalize their decisions with language that says we're not alone, others agree. "This view has been adopted by numerous other states with similar statutes."[12] "Other states hold likewise." [13] Washington is more succinct, "Other states use the same approach."[14]

There are several key elements to the court's learning process. First, information exchange is essential. The court must observe the other court's decision; it must have access to and read the other court's decision. Second, the interaction—reading the other court's legal opinion—is the main explanation for how the courts alter their behavior. Finally, this is an interdependent process. Courts make decisions not only based on their individual experiences, their own caselaw, but also based on the experiences of other courts.

Learning is more likely to occur in novel situations or times of uncertainty (Checkel 2001). As discussed in Chapter 2, when a court must decide a new legal issue, one that has not been adjudicated by the court before, often referred to as

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[10] *Russo Farms, Inc., et al.* v. *Vineland Board of Education, et al.*, 675 A.2d 1077 (N.J. 1996).

[11] *Ohio Casualty Insurance Co.* v. *Ruschell*, 834 S.W.2d 166 (Ky. 1992).

[12] *Welch* v. *Union Mutual Insurance Co. of Providence*, 776 P.2d 847 (Okla. 1989).

[13] *The Florida Bar* v. *Teitelman*, 261 So.2d 140 (Fla. 1972).

[14] *Eastwood* v. *Horse Harbor Foundation, Inc., et al.*, 241 P.3d 1256 (Wash. 2010).

issues of first impression, the court is more likely to learn because it is motivated to seek out and analyze new information. To whom the courts turn is an important aspect of this. It may be that courts are more likely to learn from other courts that have fewer inconsistent beliefs than the court does (Checkel 2001). Choosing a decision based on accepted norms in order to fit in or conform is not counter to social learning. It is further evidence of learning. It suggests that the court conducted a means/ends analysis and chose a particular outcome that reflects its own beliefs and maximizes its utility.

The learning model is not without critiques. Volden, Ting and Carpenter (2008) suggest that states are not learning from each other, but are simply simultaneously adopting the policies of similar states who face similar political and policy problems. This critique further suggests that the actions are independent of one another and not a product of a social environment. While this may be true in state legislatures, it is not true for the judiciary. Courts provide a written explanation of their choices. The choices indicate that the courts operate dynamic, connected environment. The courts' legal opinions supply the source of the courts' ideas through the citation to other states' actions.

3.3.2   Emulation

When court A adopts court B's legal rule for the purpose of appearing or giving the impression of being like court A, emulation is taking place (Shipan and Volden 2008). The key distinction between learning and emulation asks whether the

courts use the information from out-of-state jurisdictions to update their preferences to make better choices, or whether social pressure to appear like those around them motivates the courts. If a court adopts a legal rule from another jurisdiction just to look like its peers, then emulation is taking place.

The key distinction is emulation does not evaluate a policy. Instead, it evaluates the actor or institution (Shipan and Volden 2008). Berry and Berry (2007, 310) encourage us to consider policy effectiveness broadly ("effectiveness need not be conceived narrowly"). When a court justifies or legitimizes its decision or in any way explains a citation, it is evaluating the policy's character or effectiveness. As constrained decision makers, courts cannot adopt a legal rule or cite another court's case independently of evaluating the policy (Shipan and Volden 2008; Gilardi 2010). Courts make law only when the opportunity presents itself, or when litigants bring a dispute before the court. If the court evaluates in any way the effectiveness or suitability of the case or legal rule, it is learning.

Legal research is a method by which the courts restrict information to cases deemed relevant by the user's search terms. The court is extracting and simplifying information from the model court (Rogers 1995). While the source of the case is a valid and useful technique, the very nature of legal research suggests that the court focuses on the action, the case, or legal rule, and not the actor or court (Berry and Berry 2007). The court is processing, extracting, and simplifying information from the model court independent of the court itself (Rogers 1995). The court is learning from others, not imitating them.

A real-life example of imitation may be helpful. One place where we can find many examples is in fashion trends. One day in the 1960s Barbara "Babe" Paley, a New York socialite and CBS founder William Paley's wife, removed the silk scarf from her neck, and tied it to her handbag. She had no real reason for doing so, she just felt like doing it. Since photographers recorded all her outings at the time, pictures of the scarf tied to her handbag circulated throughout the country and soon thousands of women began tying scarves to their handbags. These women didn't tie scarves to their bags on a whim, they tied scarves to their bags because Babe Paley did. If she hadn't tied her scarf to her bag, women all over the United States wouldn't have either.

Courts do not metaphorically tie scarves to their bags because the Babe Paley of the judiciary does so. Courts tie scarves to their bags because the best way for the court to solve the parties' problem is to tie the scarf to the handbag. While court A's behavior may appear to be identical to court B's, it is not exactly the same because the court "extracts the essential elements" from court A so that Court B can "perform a similar behavior" (Rogers 1995, 330). This permits the learning court to adapt the model court's case law, and apply it to its own case, that is, the court re-invents the other court's case for its own use (Rogers 1995). Genuine imitation is difficult to find in the federal judicial system.

3.3.3 Competition

The governments ability to secure an economic advantage over others motivates competition. This mechanism occurs when a state's ability to attract and retain resources affects a policymaker's decision to adopt a policy (Gilardi 2010; Berry and Berry 2007). For example, if a government adopts a tax policy favoring big businesses, the government hopes to encourage businesses to relocate to its state over others where it would be more costly (see e.g., Berry and Berry 1992; Berry and Baybeck 2005). Similarly, if one government adopts a policy that makes it more difficult for certain workers to secure employment, other governments nearby may also adopt a similar policy to induce the target population to locate elsewhere (see e.g., Volden 2002; Berry, Fording and Hanson 2003)

Courts do not compete in the same manner as state legislatures in part because courts do not have the same economic tools available to them that state legislatures do. Unlike state legislatures, courts are reactive institutions, they must wait for litigants to file claims (Canon and Baum 1981). Additionally, courts do not have control over the kinds of cases it can hear; state legislatures determine courts' jurisdiction. Legislatures pass laws that tell the court what kinds of cases it can hear and the laws it must enforce. Moreover, the executive and legislative branches set the court's budget, which affects the number and quality of its court staff and the speed of case processing. Courts cannot pass a law that makes it more (or less) attractive to potential litigants. Courts cannot and have no incentive to compete for litigants.

3.3.4   Coercion

State courts do not operate entirely autonomously. State supreme courts are situated in a hierarchical system of state and federal courts. When the U.S. Supreme Court becomes a player in a policy area, it affects the precedent pattern throughout the system. And its effect can be significant.

As discussed in the previous chapter, this prominent place affords it certain privileges. It chooses which cases to review and its decisions are binding. Its position atop the hierarchy can also generate consequences. When the U.S. Supreme Court publishes an opinion, the courts below the Supreme Court—all state courts, federal district courts, and federal appellate courts—must comply with its mandate. The judicial hierarchy affects the lower courts' patterns of adoption.

When the Supreme Court decides a case, the policies diffuse through both federal and state jurisdictions. It becomes a model of top-down rather than horizontal transmission of precedent. The states and lower courts' are no longer learning from the Supreme Court. Lower courts do not look to the Supreme Court solely to gather information and learn how the Court has decided a case, as often happens in state-to-state horizontal diffusion. Federal mandate coerces the lower courts to adopt the Court's policy. The state courts are enacting the policies of national government not the policies of other states (Collier and Messick 1975). State supreme courts look to the Supreme Court as the leader atop the judicial hierarchy. As the leader among all courts, the Supreme Court coerces state courts to adopt and implement its policies.

When a state supreme court cites a fellow state supreme court, the two courts

share authority within their respective jurisdictions. However, when the U.S. Supreme Court makes policy, the lower courts must adopt that policy. That is, the Supreme Court alters the pathways of judicial innovations. The Court disrupts the conduits because the Court produces a judicial innovation—the new ruling—and the lower courts must follow its lead. The Court's decision diffuses vertically down the hierarchy (Collier and Messick 1975). In doing so, the Supreme Court disrupts the pattern of state-to-state diffusion.

However, issue area mediates this effect. The U.S. Supreme Court hears a mix of cases appealed from lower federal courts and state supreme courts. The policy areas the Court addresses are usually constitutional issues or questions of federal law. Although both federal and state courts have the power to interpret the Constitution, the Supreme Court has final authority on constitutional interpretations and all federal laws. Article VI's Supremacy Clause bolsters that power, stating that the U.S. Constitution and federal laws "shall be the supreme Law of the Land." The Supreme Court's interpretation binds all judges and courts—state and federal.[15]

This coercion, however, does not modify the diffusion mechanism *between* the state supreme courts. While it is true that the Supreme Court coerces the lower courts, one state supreme court cannot coerce another court. The courts are autonomous and independent of one another. Simply put, the state supreme courts have no power over

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[15]While nearly all lower courts implement the Court's rulings, there are instances in which lower courts disobey the Court. For example, several state courts failed to implement the Court's school desegregation rulings in the 1950s. More recently, a few state courts refused to execute the Supreme Court's decision that same-sex marriage bans are unconstitutional (including, for example, Alabama).

each other.

3.4   How Learning Fits into other Judicial Decision-Making Theories

Social learning theory complements the central paradigms in judicial decision-making theories. The learning model explains more than judicial votes, it explains the process by which justices reach their votes. It evaluates why a court looks outside its jurisdictional borders.

Ideology plays an important role in the attitudinal and rational choice theories. As we saw in the previous chapter, while Segal and Spaeth (2002) strictly apply ideology, Epstein and Knight (1997) argue that judges balance all conditions and context, including ideology, to achieve their desired outcome. The learning model does not preclude ideology; it does not bar any particular predisposition. Rather, it takes courts as they are—conservative or liberal; Republican or Democrat; man or woman; New Englander or Southerner—and examines the process by which the justices reach their decision. The learning model assumes no position regarding ideology; it takes the decision maker as given. The model acknowledges that the decision maker uniquely interprets experience and observations of the world around her.

The social learning theory also complements the legal model. Stare decisis is not a unilateral application of a legal rule. The system builds change into it. It allows for change when application or interpretation of the rule would be objectively wrong, or if a compelling reason exists to overrule the current interpretation. When a court does not follow precedent, it is not considered a failure, but rather an example of

dynamic interaction between the court and its environment. Moreover, the learning model is not a foil to stare decisis. Rather, it explains the cases in which the court does not maintain the status quo, when courts cite cases from other jurisdictions. These courts cite other courts because they are learning.

The next three chapters empirically test the social learning model. Chapter 4 explains the research design and data. Chapters 5 and 6 then examine the citation patterns and test how a number of covariates affect the diffusion of citations.

CHAPTER 4
STATE SUPREME COURTS NETWORKS

Before I can answer the research questions posed, I first describe the data and methods that I'll use. As articulated in the previous chapter, I argue that the observed judicial interactions are the result of an underlying social process of learning. My theory requires data and methods that match the evolving relationships between and among the courts. Because this process is inherently interdependent, I apply network methodologies to model state supreme courts' citation practices.

The courts consist of many types of inter-connected relationships. The federal judiciary necessitates this dependency because federal and state laws work in tandem to move a case through the appellate process. State and federal appellate courts hear cases from trial courts, and sometimes the U.S. Supreme Court will review a state supreme case. This system is the institutional fabric of our court structure.

Outside of these systemic relationships, the courts also rely on each other to gather information to support their written opinions. One court does not control the decision-making process alone, nor can one court operate in isolation, but rather the interactions between the actors and across the networks characterize the process. Just as international states rely on one another in order to cooperate, despite coordination and collaboration problems (Kinne 2013), courts cite other courts' precedent as a strategy for solving shared problems and achieving common gains.

In the next two empirical chapters, I test the social learning theory's implications with respect to multiple areas of law. Different legal issues provide the opportu-

nity to evaluate the strength of the theory across multiple systems on a wide range of legal areas. Individually and together, they also offer significant variation in the type and strength of citation patterns, which is necessary to test the models' predictions regarding the mechanisms that promote the diffusion of precedent. In this chapter, I describe the specific areas of law and the state supreme court citation data, and I explain why network analysis is necessary to model these relationships.

4.1   Data

To analyze the state supreme courts' interactions, I use an original dataset of all state supreme citations in three separate areas of law, as well as a pooled dataset of all legal issues. Details of how I created the dataset and the specific areas of law follow.

4.1.1   Areas of Law

The judicial system treats state and federal laws differently (Baum 2012). Because of this, I argue that it is important to distinguish state and federal laws in diffusion. State law issues, like judicial conduct, will influence citation patterns differently than federal law. As final arbiters of their own state law, state supreme courts are rarely affected by federal judicial decisions. Conversely, for areas in which there is significant overlap between federal and state law, state supreme courts are constrained by federal law and federal court decisions. A couple examples of a state law in which there is little interference from federal law and courts are family law and tort doctrine. Conversely, the Fourth Amendment directly affects a state's search

and seizure law, as do the U.S. Supreme Court and the U.S. Court of Appeal's interpretation of the Fourth Amendment. The interplay between state and federal law suggests that the Supreme Court cannot maintain absolute control over the diffusion of all laws (Klein 2002). For this reason, my data must contain cases from multiple areas of law, especially areas of law that possess varying levels of federal and state influence.

4.1.1.1   Judicial Misconduct

Judicial conduct is a peculiar area of law and is often ignored by scholars, yet it has a profound influence beyond judges; it also affects attorneys and the public. It arises from the premise that the judiciary must be independent, fair, and impartial so that it may interpret and apply the laws that govern our society (ABA Model Code of Judicial Conduct). To enforce these ideals, a code of judicial conduct establishes standards of conduct that guides every state. Forty-nine states have adopted rules based on the American Bar Association's ("ABA") Model Code of Judicial Conduct (Alfini and Shaman 2007). The ABA Model Code holds judges to a standard that requires competence, integrity, and diligence in both judges' personal and professional lives. Judicial conduct becomes misconduct when it brings "discredit upon the judiciary or the administration of justice."[1] Pennsylvania proposes that a judge "is not permitted to conduct himself in a manner which is unbecoming to a member of the judiciary and which demonstrates an unfitness to hold office."

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[1]Texas State Commission on Judicial Conduct. 2017. Frequently Asked Questions: What is Judicial Misconduct?, accessed February 13. http://www.scjc.state.tx.us/faqs.aspx.

Examples of what are or are not judicial misconduct may be instructive. Judicial misconduct occurred when an individual presided over the multiple cases that involved his "paramour's relatives, failed to disclose his relationships with the litigants, and engaged in ex parte communications" and removed from his position.[2] A judge was suspended for storing sexually explicit materials on his county-owned computer and showing the images to members of his staff.[3] In Florida, forming a relationship with a former defendant and convicted felon with substance abuse problems, procuring an apartment for him, and purchasing a phone and motor vehicle results in a reprimand.[4]

Judicial conduct rules become legally enforceable upon enactment by statute or court rule. Many judicial misconduct complaints are filed, however, most are dismissed. An individual—either a sanctioned judge or injured party—can turn to the appellate court to challenge the decision of a state's judicial commission. However, a litigant who is dissatisfied with the court's decision cannot challenge the merits of the court's judgment.

Judicial conduct is a rarely litigated claim. This is important for two reasons. First, the universe of state supreme cases on judicial conduct is relatively modest. This allows me to construct the entire dataset with some ease. Second, because the number of cases is relatively small, the courts may not have legal precedent of their

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[2] *Matter of Young*, 974 N.E.2d 658 (N.Y. 2012).

[3] *State ex rel. Smartt* v. *Judicial Standards Commission*, 57 P.3d 58 (Mont. 2002).

[4] *In re: Henderson*, 22 So. 3d 58 (Fla. 2009).

own to guide their decision-making. As a result, I expect courts will look to other states for guidance.

4.1.1.2 First Amendment and Family Law

In addition to judicial (mis)conduct, my dataset also includes two additional and very different legal areas: family law and First Amendment. Family law includes issues such as divorce, premarital agreements, maternity and paternity proceedings, adoption, as well as child custody and support. The U.S. Constitution does not speak this area of law, and under the Tenth Amendment, the states are generally left to manage it.

I also examine one area of law that has significant federal involvement: the First Amendment. The First Amendment covers a vast array of issues. Freedom of speech and religion are perhaps the best-known areas, but the First Amendment also includes free press and the freedom to assembly peacefully. Judicial interpretation of the First Amendment of the Constitution has established minimum protections and restricts the state and federal government from interfering in a person's freedom of speech. As such, the federal government—by way of the U.S. Constitution—strongly influences this area of law.

I expect the diffusion process varies considerably across areas of law. State laws that have little federal interference will evolve in a manner unlike state laws that have significant federal interference. To test this hypothesis, I examine the diffusion of two areas of law that have very limited to no influence from the federal government,

family law and judicial misconduct, and contrast those areas with First Amendment cases.

> **Hypothesis 1.** *State law matters—family law and judicial conduct—will be cited by more state supreme courts than First Amendment cases.*

4.1.1.3 Combined Laws Model

I believe that the legal issue matters. Beyond the interplay of federal and state laws, each issue area has its own history, developing in its own unique way based on the litigants who bring the case to court, social mores that exist at the time the case was decided, and justices who sign on to the majority opinion, among others. Yet, court diffusion studies focus either on a single issue area (see, e.g. Glick 1992; Canon and Baum 1981, (right-to-die and tort laws, respectively)), or pool all the areas into a single model (see, e.g., Hinkle and Nelson 2016; Kilwein, John C.Brisbin Jr. 1997; Harris 1985; Kagan et al. 1977). Choosing either one of these methods fails to describe and explain the individuality of the legal issues.

To highlight and distinguish the diffusion patterns of law, I also add one further model to my analysis: a pooled model. This model combines all three areas of law (judicial conduct, family law, and First Amendment) into one. In this dataset, if a state supreme court cites another state supreme court in any one of these three areas of law, it will be coded as a 1. With this additional model, I intend to not only compare the models, but also to contrast the results with previous scholarly work.

> **Hypothesis 2.** *The combined legal issue model will be cited by more state supreme courts than the specific areas of law.*

4.1.2 Data Collection

My dataset is made up of citations between the state supreme courts. I constructed a complete dataset of every state supreme court's published and *per curiam* opinions. I began by searching LexisNexis Academic to obtain a list of all fifty-two state supreme court opinions that involve the issues of family law, First Amendment, and judicial conduct. I compiled the list of published signed and *per curiam*[5] cases made available on LexisNexis' website through its topic search function. LexisNexis utilizes something it labels, "Headnotes." Although it is likely that there are several key legal issues in any given case, Headnotes identify the primary legal issue(s) in an opinion. LexisNexis identifies the legal issues using language directly from the court's opinion. For example, judicial conduct is a key topic that is searchable in LexisNexis' database.[6]

Next, I identified any instance in which a state supreme court cited another state supreme court. To collect these case citations, I developed a computer-based strategy that searches and retrieves the case citations from the text of the case decisions. The program searched the cases based upon standard legal citation format. The legal citation format provides the names of the parties involved in the case; the court that decided the case; the year of the decision; the name, number, and page number of the reporter; and the state. For instance, in:

Statewide Grievance Committee v. Nancy Burton, 10 A.3d 507 (Ga. 2010)

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[5]A *per curiam* decision is an unsigned majority opinion written by an unidentified justice.

[6]Headnotes searched were: judicial conduct, First Amendment, and family law.

the case is reported in volume 10 of the Atlantic regional reporter on page 507. The state abbreviation "Ga." informs the reader where and what type of court heard the case; in the above example, the case was heard in the state of Georgia and was decided by the Georgia Supreme Court. The court decided the case in 2010. I wrote the program to search judicial opinions for the state abbreviation followed by a four-digit number to represent the year to mimic the legal citation format. I utilized a similar method to capture the year the court decided the case. Finally, although courts frequently cite their own cases, I removed all self-reflexive citations from the dataset, i.e., instances in which a state court cites itself, leaving 50 states who may potentially cite any of the other 49 states. I did this because I am not interested in a state supreme court's citations to its own prior cases.

4.2   Method

A cursory reading of any supreme court opinion reveals that courts regularly cite cases in its opinions. As discussed, the citations come from the court's own cases, but also from other courts' decisions. The courts' reliance on other courts to reach a conclusion forms the basis of my theory. It also requires relational data and methods that directly model this dependence. I apply two methods to model the citations: dyads and network methodologies. In this section, I discuss the state supreme court data and outline the statistical analysis.

4.2.1 Dyads

Since Berry and Berry introduced event history analysis to policy diffusion in 1990, it has dominated the field, and rightly so. Providing an explanation for why policies were adopted, event history analysis relies on internal determinants (state-level characteristics) and external factors such as regional factors (e.g. geography). It also supplies scholars with a number of tools they previously lacked, such as the ability to analyze longitudinal data as well as pooling multiple policies into a single dataset. These properties allow scholars to predict the probability that a state with certain characteristics will adopt a policy during a particular year (Berry and Berry 1990).

Yet, the state-year event history analysis model is limited (Volden 2006). Many of these analyses focus on a single policy by examining the effect of geographically contingent neighbor's adoption of the policy. Typically, the models examine whether or not a state adopts a policy, they are not concerned with which policy is adopted. Event history analysis and policy diffusion have been helpful in structuring my research interest and approach, yet they have limited applicability for this project.

The policy diffusion literature has made many methodological advances in recent years (see, e.g. Karch 2007; Boehmke 2009; Desmarais, Harden and Boehmke 2015). I adopt one such innovation: the dyadic approach (Volden 2006; Gilardi and Füglister 2008). The international relations ("IR") literature frequently uses a dyadic approach in its analyses. Just as IR connects nation states with one another, this approach is especially applicable to the study of courts. In my dataset, two courts

make up a dyad. A dyad occurs when court from state i cites a case from a court in state j.

$$i \rightarrow j$$

As you can see, the dyad is made up of two state supreme courts, $court_i$ and $court_j$, $court_i$ is the state supreme court who is doing the citing, i.e., writing the opinion, and $court_j$ is the state supreme court that is being cited by $court_i$. As noted above, the data collection procedure identifies the dyads—$court_i$ and $court_j$— as well as the year in which the court made the citation.

The dyadic approach makes it possible to model a number of the courts' qualities. I can empirically test not only characteristics of the citing court, $court_i$, and the cited court, $court_j$, but also attributes of the previously cited decisions and features of the relationship between the two courts or states. When a court researches possible decisions to cite, it is able to assess any potential risks associated with citing a case. The dyadic model also allows me to evaluate this information while controlling for the citing state and the type of case. This approach builds on the literature that examines the mechanism behind policy diffusion. It analyzes the impact of the courts' cases conditional on the court it cites.

4.2.2   Network Analysis

We cannot adequately explain the behavior of a single actor without considering its relations with the other actors in the system. State supreme courts cite each other and those citations influence their opinions. Because this process of judicial

decision-making is based on relationships, we must consider the system as a network and apply network analysis. Network analysis is similar to dyadic analysis, but goes one step further.

4.2.2.1 Advantages of Social Network Analysis

Network analysis allows researchers to study system structure and dynamics, and recent work has employed network analysis to evaluate patterns (Albert and Barabási 2002). In political science, network analysis bridges the gap between political science's behavioral and institutional concentrations. Analysts leverage networks' relationships to describe and predict behavior. Network analysis assumes that structural relationships explain observed behavior better than standard demographic and political variables such as gender, age, and ideology. Moreover, it offers a means of identifying relationships that the study of individual behavior would not capture by itself. It does so by examining and analyzing the interdependence among the actors—the individuals, groups, or institutions—in a network (Huckfeldt 2009; Ward, Stovel and Sacks 2011).

I am not the first to apply network analysis to the courts; scholars have applied this technique to the U.S. Supreme Court. For example, Fowler et al. (2007a) apply network analysis to Supreme Court cases to create a measure of the most legally relevant precedent. Leicht et al. (2007) examines how time affects the likelihood that a set of cases will be cited. In yet another example, Fowler and Jeon (2008) construct a network of U.S. Supreme Court cases to examine the evolution of common law from

1754 to 2002. They find that most cases have a shelf life, a time in which the cases are relevant before becoming obsolescent.

These examples take the citation as a given and do not ask how those Supreme Court decisions came to be. Blending policy diffusion and social network analysis theories and methods yields a model that focuses on the social process of judicial decision-making. Empirical examination of the claims I make in my hypotheses requires modeling the relationships using a social network analysis approach.

4.2.2.2   Importance of Modeling Interdependence

Traditional statistical analyses such as logit and event count methods cannot model the interdependencies of relational data (Cranmer 2016). These methods assume the data upon which they are built are independent and identically distributed, but this assumption is improbable given the qualities of the data and my argument. The citations, by their very nature, suggest an endogenous relationship.

Ignoring the dependencies produces a number of problems. It can result in faulty inference and has levels of analysis problems, as well as falsely attributing explanatory power to covariates, among others (Cranmer and Desmarais 2011). Network analysis, by contrast, specifically models both the covariate effects on the outcome variable and directly estimates the dependencies, thus overcoming traditional models' deficiencies. Additionally, network analysis treats the dependent variable differently than traditional statistical models. It does so to avoid data multiplication issues.

The nodes in the network are state supreme courts. The citations from learning

court (citing court) to the model court (cited court) are the links that connect the courts. However, the dependent variable is <u>not</u> $Y_{ijt} = 1$ if there is a citation from one state supreme court to another at year t, and $Y_{ijt} = 0$ otherwise. Rather, the dependent variable is the network at year t. Network analysis treats the network as a single observation.

If I considered each directed dyad as a dependent variable, there would be 2,450 possible dyads each year (50 courts x 49 potential courts to cite), for each area of law. For the period 1960–2010, there would be 122,500 dyads per legal issue area. Treating the dyads this way is problematic (Cranmer 2016). Since tests of significance are calculated based on sample size, such a high N produces low p-values. An N of 122,500 is very high—much higher than the 50 state supreme courts—this creates a data multiplication problem. With such a high N, very small covariate effects would achieve otherwise unattainable low p-values (Cranmer, Desmarais and Menninga 2012).

Not all traditional dyadic analyses have this problem. A typical dyadic model, such as event history analysis, pools the policies together and treats the dyads as independent of one another given the exogenous variables. Yet, my theory argues that the dyads themselves are interdependent, explicitly violating the independence assumption. To overcome this problem, network analysis directly models the endogeneity by integrating the dyads into a single network per year. This approach combines the strengths of the dyadic model, while accurately accounting for the number of observations.

4.2.3 The State Supreme Court Citation Network

Social network analysis data is built on relations. Legal precedent can be understood as a court having a preexisting relationship with the courts and cases previously decided; it is connected and bound by the decisions that were made before the present case. Law and courts, especially legal precedent, is an area especially ripe for social network analysis to describe and explain different precedent patterns and account for the variation of the links between state courts.

Citation analysis differs from common networks in three important ways (Leicht et al. 2007). First, the network is based upon directed relationships. A directed dyad occurs when court i cites court j's case, $i \rightarrow j$. The directed citations can create asymmetric relationships, which means that a citation from $court_i$ to $court_j$ is not the same as a citation from $court_j$ to $court_i$. For example, in 1991, when the California Supreme Court wrestled with how to interpret a jurisdictional issue in a child support modification order, it cited the Nebraska and North Dakota supreme courts.[7] In the same legal opinion, the California Supreme Court also cites two different North Dakota cases. Although California cited North Dakota twice in the same opinion in the same year, the data takes a value of one for the California-North Dakota dyad. However, this relationship says nothing about the North Dakota-California dyad. It is very possible that North Dakota regards California differently than California views North Dakota.

Citation networks are unique for a second reason: directed dyad networks

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[7] *Monterey County* v. *Cornejo*, 812 P.2d 586 (Cal. 1991).

evolve over time. Each year new cases are published creating new opportunities for connections to form. Because a court can only cite a previously decided case, this type of network changes on only one end, at the current period in which the newest case is published. A court in period 1 cannot cite any cases published before period 1 it because there are no opportunities for connections. In period 2, the courts can only cite cases from period 1. As time evolves, there are more opportunities to form citations because a greater number of cases are available with which to form citations. It's also important to note that nodes and edges are permanent and can never be removed or altered. Once Florida cites state Missouri, this citation cannot be undone.[8] Thus, the state supreme court network evolves dynamically over time, but only on one end. Figure 4.1a provides an example of the evolution of citations.

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[8]This process is distinct from event history analysis. Here, the citation exists in perpetuity whether or not a court cites it.

Figure 4.1: Types of Networks

(a) Acyclic   **(b)** Cyclic
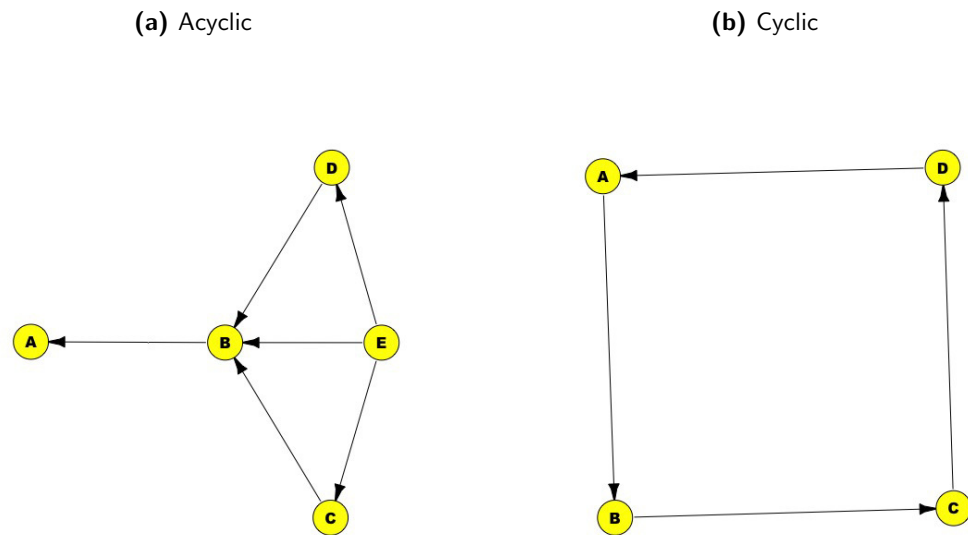
Another more technical way of describing this is the citations are based on acyclic relationships. Acyclic means that there is no way for the connections to form a complete circle, or for the links to loop back to the original node. For example, if B is an article published in 2000 and A is an article published in 1985, A cannot cite B because B it was published 15 years after A was. Thus, the connections between any numbers of nodes will never be closed because one cannot cite an article that has not yet been published. Figure 4.1a illustrates a directed acyclic graph and Figure 4.1b is a cyclic network. The key distinction between the two graphs is that the node A on the left does not have any arrows directed away from it, while the node A on the right does. Figure 4.1b cycles through the nodes and is open, while 4.1a cannot loop

through the nodes.

Because the citations evolve over time and are acyclic, there are two distinct time periods in the analysis. There is the time at which the learning court *writes* the legal opinion. And, there is the year of the *cited* legal opinion. For example, in 2008, the Washington Supreme Court cited an 1817 decision of the Pennsylvania Supreme Court.[9] When the Washington court cited the Pennsylvania court, Washington was not considering nineteenth century Pennsylvania, the time at which Pennsylvania wrote the opinion. Rather, the Washington court was thinking of Pennsylvania at the time of its writing, in 2008. It is natural to consider present reality, in part because it is difficult to consider a different time, especially one in which the writer was not alive. Therefore, I measure the variables associated with the cited court at the year the court wrote the decision. The data cover years 1960–2010, that is, the data cover the years in which courts wrote opinions.

4.3   State Supreme Court Citations Across Time and Legal Issue

Before turning to the analysis, I briefly introduce the citation data. Across all policy areas, every court has been cited and every court has cited a sister state supreme court. The number of cases published by each court and the number of citations per year shape the network's structure. 2004 was the most active year, there were 159 total citations. In contrast, in 1961, 1963, 1965, 1966, 1969, and 1970 there were zero citations. During this time period, Florida received the most citations (184),

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[9] *In the Matter of the Marriage of Kowalewski and Kowalewska*, 182 P.3d 959 (Wash. 2008) citing *Henwood* v. *Cheeseman*, 3 Serg. & Rawle 500 (Pa. 1817).

and Hawaii the fewest (10).

Citations may be a function of the number of cases a court publishes. If a court has fewer of its own cases, it may need to cite other courts more often. The number of published cases differs widely based on the area of law. There were 1,359 published First Amendment cases, yet the range for First Amendment cases is vast. West Virginia published the most (371) while Colorado, Hawaii, and Alabama each published only 1 case. There were 1,018 published Family Law cases. California published the most with 68 cases and Indiana published the fewest with 8 decision. Of the judicial conduct cases, there were 1,360 published cases. Mississippi published the most with 98 cases, and Rhode Island the fewest with 5 cases. This preliminary analysis lends support for my second hypothesis that legal issue area matters.

Figure 4.2: Total Citations by Area of Law
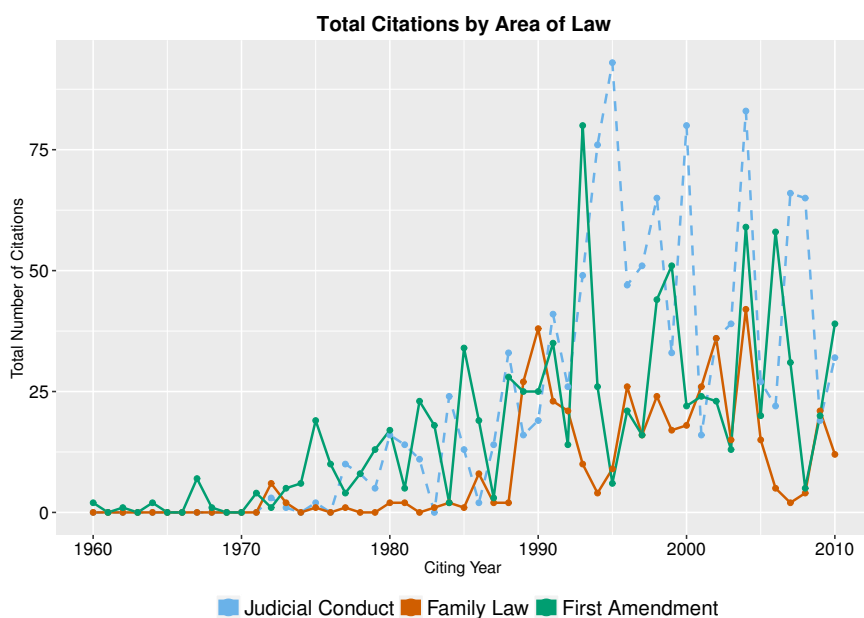
4.4   Conclusion

In this chapter, I presented my data. In it I capture citations between state supreme courts in three areas of law as well as a pooled issue area model. I also introduced network analysis and built a case for why it is necessary to use network data and methods. These data and methods are well suited for this project because the citations between and among the courts are an outward expression of the influence other courts have on a court's decision making process.

I also offer a preliminary examination of the data to illustrate that the citations vary over legal issue area and across time. In the next two chapters, I apply network analysis to state supreme court citations. First, using centrality statistics, I describe the state supreme court leaders. In Chapter 6, I apply a comprehensive model to examine the court's characteristics.

CHAPTER 5
TO WHOM STATE SUPREME COURTS TURN

When courts interact, they transfer knowledge between them. That knowledge accumulates and changes its landscape. The social learning model explains that the courts turn to their peers for information, but it does not fully tell us to whom the courts turn for information. Policy diffusion's internal determinants explain policy adoptions based on shared political, economic, and demographic characteristics. Yet in the interactive and dynamic judicial environment, additional processes may help explain a court's citations. A social network theory of precedent reveals additional factors that influence courts' decision making.

This chapter examines to whom the courts turn when they cite the precedent of a fellow state supreme court. To address that question, I employ a number of statistics to describe the state supreme court networks. Here, I begin by looking at the basic network and node properties of the entire network of all the legal issues from 1960–2010. My longitudinal data is fundamental to capturing the evolution of complex social systems (Box-Steffensmeier and Christenson 2014; Mali et al. 2012). Next, I explore whether the legal issue networks resemble each other. I discover who the leaders are by exploring network measures of degree and betweenness centrality, as well as the flow of information between the courts. Leaders are not static; their power rises and falls over time. Finally, I analyze how precedent flows from one court to another (Huckfeldt and Sprague 1987). Although state supreme courts are supposed to be autonomous, centrality measures demonstrate that state supreme courts share

power.

5.1   Citations and Judicial Decision-Making

Prior scholarship focuses on which U.S. Supreme Court cases are important (Lupu and Fowler 2013; Fowler and Jeon 2008; Fowler et al. 2007a). However, research rarely assesses which state supreme courts are most likely to influence other courts' decision-making. Since the state supreme courts are part of an interdependent social system, I argue that the citations exchanged between the courts contains important information; the citations shed light on to whom the courts turn for guidance.

Law and courts scholars quantify state supreme courts in a number of ways. Glick and Vines's (1973) legal professionalism score is based on a state's adoption of ABA model standards for judicial selection and court organization, as well as size of court administration, tenure, and salary. Caldeira (1983) ranks courts by reputation, which is a count of the number of times a state court cites decisions by other courts. Canon and Baum (1981) create an innovativeness measure based on the timing of a state court's adoption of several tort laws. Finally, much like his legislative professionalism score, Squire (2008) also creates an index of state supreme court professionalism; it includes judicial salaries, agenda control, and number of law clerks. Scholars use these measures—often together—as means of testing the determinants of courts' influence.

While state budgets, number of law clerks, and judicial salaries are useful indicators of a state's ability to innovate (Walker 1969), they do not directly measure

the courts' influence. Instead, a a series of objective measures would provide a more accurate measure of influence. Since courts cite each other directly, and the citation is observable, the citation is easier and more accessible to measure. The number of times a court is cited by its peers provides a more accurate measure of how the other state supreme courts assess their sister courts' scholarship.

Social network analysis is a method of structural analysis that examines the pattern of connections among a set of actors. Network analysis captures an actor's power or influence. We measure power or influence by a number of positions in the network, referred to as measures of centrality. These measures capture both the source and the distribution of power or influence. That is, these measures tell us about how the actor fits into the overall network. There are two basic components in a network: nodes and edges. Nodes refer to actors, which typically are persons, organizations, states, or courts. Edges, also known as links, vertices, or arcs, represent the connection between the actors or nodes.

Centrality is a critical network measure; nearly every network analysis conducted utilizes centrality in some manner. For example, to test the influence of interest groups on U.S. Supreme Court decision-making, Box-Steffensmeier, Christenson and Hitt (2013) use eigenvector centrality to represent the maximum liberal or conservative interest group power in their probit model. Fowler et al. (2007b) apply network analysis to U.S. Supreme Court cases; they adopt a method of Internet search theory (Kleinberg 1999) to create a new importance score to distinguish the most significant cases. Similarly, Fowler and Jeon (2008) also examine U.S. Supreme Court cases and

also adapt Kleinberg's work to apply authority and hub scores to the courts to identify important cases. In both articles, the authors propose a measure of centrality and rank the most important U.S. Supreme Court cases.

Network analysis can describe the state supreme court network as a whole, as well as examine courts individually. We can measure courts' influence within the network using several centrality statistics. A court that is very influential can be measured both by the number of other courts it influences (out degree centrality), the number of courts that cite it (in degree centrality), as well as how independent the court is within the network (betweenness).

An example might be helpful. Table 5.1 offers an adjacency matrix of five states. Since a court cannot cite itself, those cells have a line through them. We calculate in degree centrality by adding up the row for each learning court. In the mini-example of five state courts, Alaska's centrality is fourteen and Alabama's is zero. To calculate out degree centrality, we sum the column. California has an out degree centrality of five and Arkansas has an out degree citation of eight. Finally, I normalize the measures by dividing the sum by the maximum degree possible (usually N-1), to produce a measure scaled from zero to one.

The measures discussed so far analyze the nodes. To examine the entire network, I turn to density. Density represents the number of ties over the maximum number of potential ties. Since density directly models the number of citations, and

Table 5.1: State Supreme Court Citation Matrix

Learning Court	Model Court				
	AK	AL	AZ	AR	CA
AK	—	2	1	6	5
AL	0	—	0	0	0
AZ	1	0	—	1	0
AR	0	0	0	—	0
CA	0	1	2	2	—

we know that in a given year several courts do not cite the precedent of other courts, I do not anticipate the network to be very dense.

5.2 All Laws over Time

Figure 5.1 displays the network of all laws from 1960–2010. The nodes represent state supreme courts and are linked together by a citation from one court to another. I have aggregated the citations for each ten-year period into a single network graph. Many courts in the 1960s are isolated from the others; they do not appear in the graphs. These are courts that are not cited by any other court and do not cite any other court. As you can see, the frequency of citations increases over time; the figure illustrates the dynamic nature of state supreme court citations.

Table 5.2 provides some basic network properties of the state supreme courts across the five decades. The graphs in Figure 5.1 and the table offer general citation patterns. As expected, degree centrality increases throughout the decades.[1] Figure 5.1 illustrates that the state supreme court system has become more connected over

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[1]I calculated the centrality measures in Table 5.2 by first calculating the centrality for each year and then averaging the measure across the decade.

time. In the 1960s, the network is very sparse; only a few courts cited the precedent of other state supreme courts, as reflected by a minimum degree centrality of zero. In the 1970s, two courts remain isolated from their peers (Delaware and New York), yet the overall frequency of citations remains low. As the graphs and average degree centrality illustrate, courts typically only cite one to two other courts over the course of the entire decade. The 1980s, however, mark a change in a citation patterns. During the 1980s, courts begin to cite not just a single court, but also multiple courts. On average, a court receives about six citations. That pattern continues over the next two decades as the courts become more connected.

Figure 5.1: State Supreme Court Networks for All Laws, 1960–2010
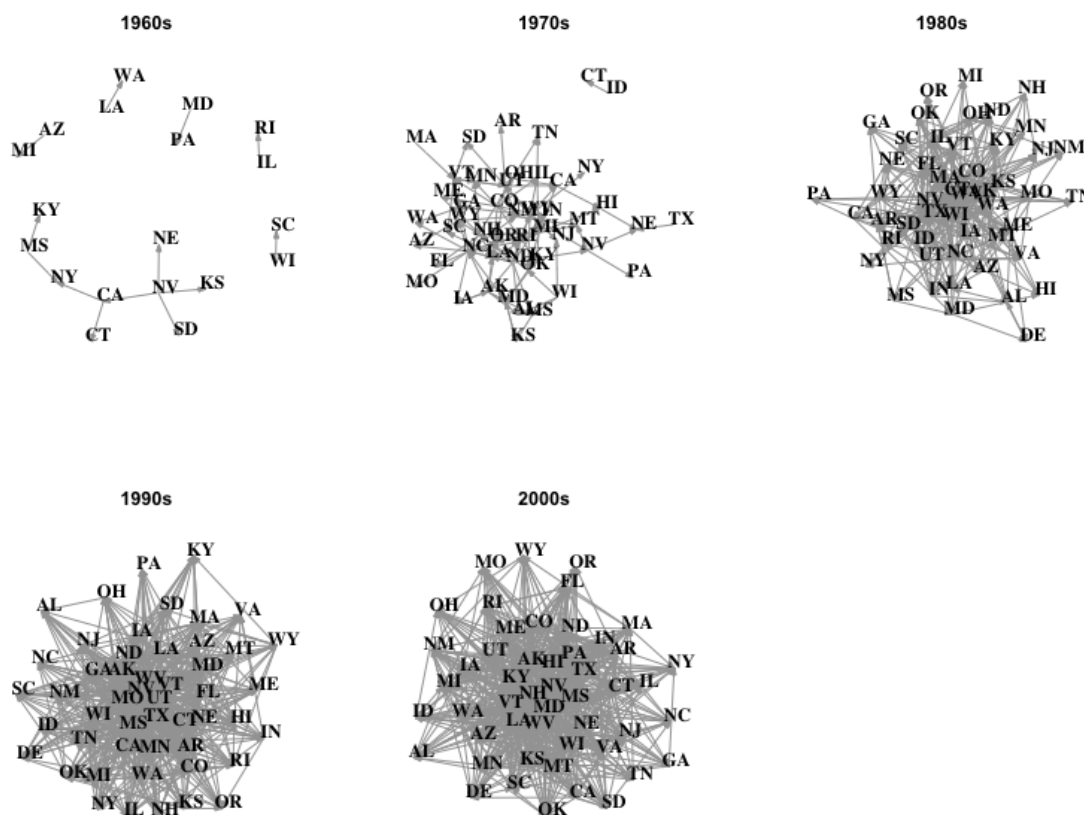
Courts can also exercise influence by being a bridge that connects two groups. Betweenness captures courts that control the flow of information between and among the courts. Since the networks as so sparse in the 1960s, the betweenness scores are also incredibly low. In short, there is little information with which to connect groups. The average betweenness score for the 1980s is 56.08 with a range from zero to 379.21. The relatively high average and large range indicates that several courts belong to large and connected groups while others are not intertwined into any

groups (Box-Steffensmeier and Christenson 2014). Nevada and West Virginia have the highest betweenness score over the entire time period with scores of 567.59 and 378.45, respectively. The high betweenness score means Nevada and West Virginia act as gatekeepers of information. Since more information passes through these courts than any other, removing them from the network would disrupt citations between all the other courts.

Table 5.2: Combined Laws Network Properties

	Centrality	Mean	Std. Dev	Max	Min
1960s	Degree	0.26	0.49	2.00	0.00
	Betweenness	0.04	0.28	2.00	0.00
1970s	Degree	2.08	1.35	6.00	0.00
	Betweenness	15.24	27.36	109.58	0.00
1980s	Degree	6.22	2.08	10.00	3.00
	Betweenness	56.08	71.69	379.21	0.00
1990s	Degree	12.78	2.27	17.00	7.00
	Betweenness	34.16	37.57	149.43	0.00
2000s	Degree	14.02	2.78	20.00	8.00
	Betweenness	35.20	36.57	165.49	0.00

Finally, we turn to the network's density. We calculate density as the number of observed citations divided by the total number of possible citations in each year. Unlike the other tables and figures, this graph illustrates the Combined Laws network's density per year. As I expected, the overall density of the network is low. This measure indicates that the entire network is not especially connected. However,

Figure 5.2: Density
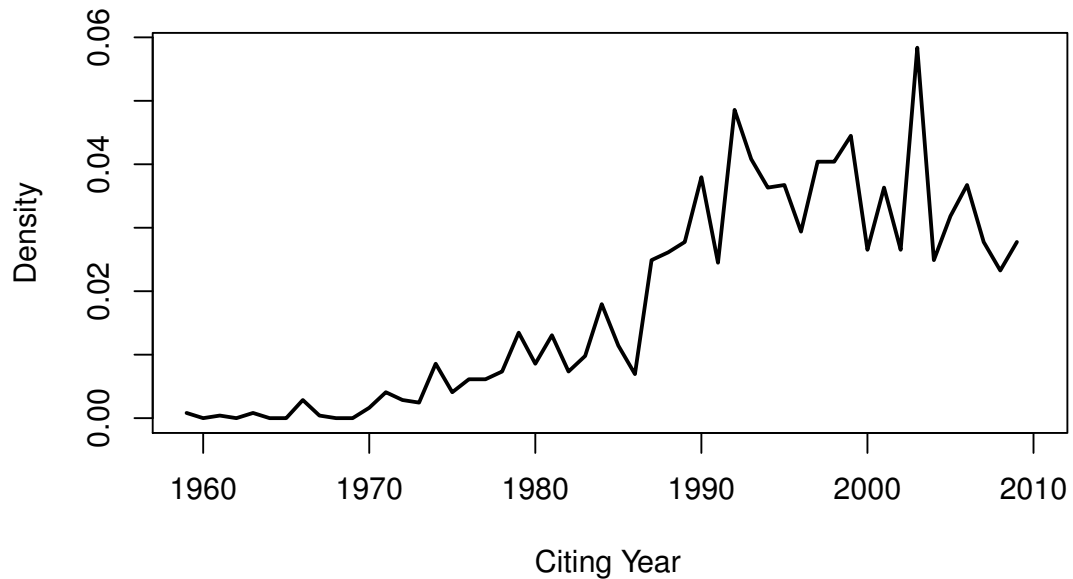
density has increased over time. This is not surprising since degree centrality has also increased throughout the decades. The combined legal issue's network properties offer an overview of its structure and topological features.

5.2.1   Citors and Citees: Legal Issue Areas

Next, I parse the specific legal areas. The number of cases published by each court and the number of citations per year shape the network's structure. Across all policy areas, every court has been cited and every court has cited a sister state supreme court. 2004 was the most active year, there were 159 total citations. In

contrast, in 1961, 1963, 1965, 1966, 1969, and 1970 there were zero citations. Over the entire time period, Florida received the most citations, and Hawaii the fewest.

The network looks at the positions and patterns of the actors, and then quantifies the actors' relationships (or lack thereof) with each other. In degree centrality aggregates the number of the links or citations connecting the courts in a given year. A high in-degree measure indicates prominence or influence in the network. This measure is significant because each citation represents a choice made by actor A to cite actor B. The more often a court is cited, I expects its visibility within the network will also grow. This suggests that the more often a case is cited, those citations will lead to additional citations.

Out degree measures the number of citations a court makes to other courts. Betweenness refers to the number of shortest paths between actors in a network. Betweenness identifies the court that controls the communication of information. Although a court may not be highly visible on other measures of centrality, a court with a high betweenness score often resides on the periphery of a community but connects two or more groups together, serving as a conduit of information.

There is one final measure that I included, hubs and authorities. Fowler et al. (2007b) and Fowler and Jeon (2008) adopt a method of Internet search theory (Kleinberg 1999) that creates a importance scores to identify the most significant cases. It distinguishes importance by weighting the in or out degree. Hub scores refer to courts who cite a lot, while authority scores are courts who receive more citations. I apply this measure to the state supreme court networks to use as an additional measure to

Table 5.3: Top Authority Score

Family Law		First Amendment		Judicial Conduct		All Laws	
Maine	1.00	California	1.00	Florida	1.00	California	1.00
Minnesota	0.81	New Jersey	0.84	Minnesota	0.65	New Jersey	0.84
North Dakota	0.73	Washington	0.84	Missouri	0.62	Washington	0.84
Alaska	0.64	Massachusetts	0.83	Louisiana	0.61	Massachusetts	0.83
Mississippi	0.58	Florida	0.79	Pennsylvania & Indiana	0.60	Florida	0.79

discover leaders.

Does a single state supreme court emerge as the leader? Tables 5.3–5.6 present centrality measure scores for the top five courts for each measure. I present these statistics for the entire period in the data, 1960–2010. During this time period, no one leader dominates across the centrality measures. Florida has the highest in degree citation for First Amendment, judicial conduct, as well as combined laws. Notice though, that the betweenness score produces very different list than the in degree leaders. Here again, betweenness might not capture the most visible courts, but it does identify the courts who connect sub-groups. Besides the centrality scores capturing slightly different phenomenon, the most central court depends in part, on how we choose to assess influence and three factors in particular affect that determination.

There are several key findings here. First, the courts' citation practices depend on area of law. While every court has been cited, the frequency of citations varies by legal issue area. For example, Washington is cited thirty-three times for First Amendment issues, yet it received twenty-four judicial conduct citations, and only six family law citations. Some courts received zero citations in certain areas of law.

Table 5.4: Top In Degree Score

Family Law		First Amendment		Judicial Conduct		All Laws	
North Dakota	0.66	Florida	1.17	Florida	1.17	Florida	1.17
Maine	0.64	Massachusetts	0.88	Massachusetts	0.88	Massachusetts	0.88
Alaska	0.55	California	0.83	California	0.83	California	0.83
Minnesota	0.45	Colorado	0.81	Colorado	0.81	Colorado	0.81
South Dakota	0.43	Minnesota	0.77	Minnesota	0.77	Minnesota	0.77

Table 5.5: Top Hub Score

Family Law		First Amendment		Judicial Conduct		All Laws	
West Virginia	1.00	Texas	1.00	Texas	2.25	Texas	2.25
Maryland	0.21	Utah	0.45	Utah	1.04	Utah	1.04
Connecticuit	0.13	Colorado	0.41	West Virginia	1.00	West Virginia	1.00
Nevada	0.09	Wisconsin	0.36	Colorado	0.96	Colorado	0.96
Vermont	0.08	West Virginia	0.34	Missouri	0.96	Missouri	0.96

Table 5.6: Top Out Degree Score

Family Law		First Amendment		Judicial Conduct		All Laws	
West Virginia	3.70	Texas	2.25	Texas	2.25	Texas	2.25
Maryland	1.17	Utah	1.04	Utah	1.04	Utah	1.04
Nevada	0.85	West Virginia	1.00	West Virginia	1.00	West Virginia	1.00
Connecticuit	0.57	Colorado	0.96	Colorado	0.96	Colorado	0.96
Alaska	0.32	Missouri	0.96	Missouri	0.96	Missouri	0.96

Alabama and Hawaii, for example, received no family law citations. North Dakota, Maine, and Alaska received the most family law citations. Florida, Massachusetts, and California were cited the most for First Amendment law. Florida received the most judicial conduct citations, nearly twice as many as Minnesota, the second highest scoring court for judicial conduct. Full tables of the centrality scores are available in the Appendix A, Tables A.1–A.5.

Second, citations are bi-directional. Focusing exclusively on which court is being cited misses interesting characteristics of the judicial system. Courts vary greatly in their use of precedent from other state supreme courts. The courts that engage in more citations indicate that they learn from or rely on others in its decision-making. Independent courts would cite very few courts while interdependent courts rely on many other courts in its decisions. In some instances, courts depend heavily on the other courts in a particular area of law but in other legal issue areas, courts do not cite any other court. Table A.5 (betweenness) captures these characteristics. New York only relies on other courts for Family Law matters. Texas makes at least 108 citations to other courts regarding First Amendment issues, but does not cite cite any other court for Family Law matters. Similarly, West Virginia relies heavily on other courts for Family Law cases (174), but less so for the other areas.

Third, each year and each area of law highlight different citation leaders. Figure 5.3 demonstrates a snapshot of two separate years over each area of law. The graphs offer a visual depiction of the networks, focusing on the court being cited. Each court is represented by a circle, and an arrow connects two state supreme courts. When a

Figure 5.3: Networks

(a) First Amendment Network

(b) Family Law Network

(c) Judicial Conduct Network

court cites another court, an arrow begins at the learning court and the arrowhead ends at the court being cited. In the graphs, the larger the courts' circle and label, the more connected the court is. In the 1999 First Amendment Network in Figure 5.3a, for example, Minnesota cites Colorado. Near the bottom of the graph is Alaska, who received only one citation from its sister courts in 1999. Returning to Figure 5.3a, relative to the other courts in the network in that year, Minnesota received a high number of citations. Minnesota also cited many courts in the same year. Wisconsin emerges as an active court in 1999 First Amendment law. It received several citations and cited Rhode Island, Tennessee, and Massachusetts among others. These findings demonstrate courts regularly cite each other. Across all three areas of law during 1960–2010, courts cite on average approximately forty other courts. This statistic too varies by legal issue. Courts cite others more often in First Amendment cases (17.78), followed by Judicial Conduct (14.2), and Family Law (8.7).

Figure 5.4: Total In Degree Citations by Area of Law
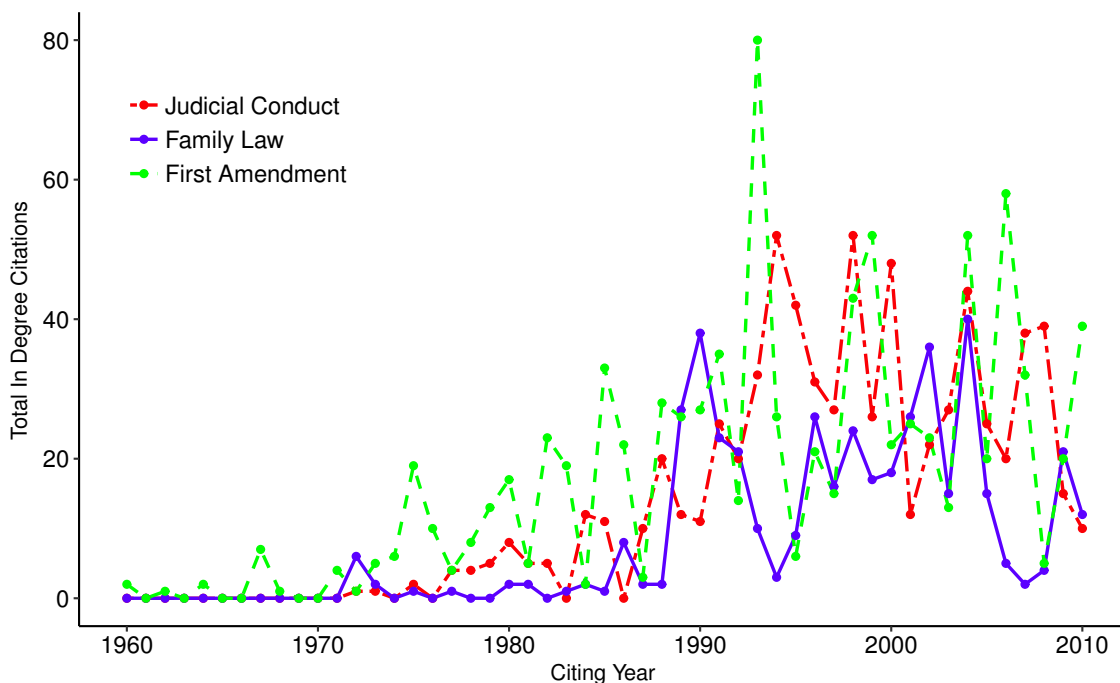
Plotting the citations over time confirms our analysis that courts cite each other more often over time. There is a very notable increase in the number of citations beginning around the mid- to late-1980s. In the dark ages before the internet, justices and their clerks relied exclusively on hardbound case reporters to research cases outside their jurisdiction. I suspected that in the early part of my data, the cases the court cited would come from their own districts, as defined by West, the publisher of the hardbound legal reporters.

To test this hypothesis, I created a series of indicator variables that are 1 when two states share certain features. I tested for geographic contiguity, sharing the same

West legal reporting region, belonging to the same federal appellate circuit court, as well as every combination of those features. In the 1960s, there were thirteen cross-court citations. Of the thirteen cases, only one citation was to a court in the same West region and two citations shared both a West reporting region and a federal appellate circuit. The other nine citations do not share any regional attributes. In the 1970s, there were ninety-seven cross-court citations. Seventy-three of the citations do not share any regional attributes. Ten citations were made to a geographic neighbor, six citations were to a court in the same West reporting region, two citations were made to a court in the same federal appellate circuit, and the remaining six citations were made to a court with various combinations of these characteristics. I do not believe that the nature of citations has changed over time. Rather, what has changed is the introduction of electronic case systems (Westlaw and LexisNexis). Courts no longer have to pore over books in the law library to research case law. Electronic legal databases have made citations to outside jurisdictions more accessible. An examination of the cases cited during the 1960s and 1970s reveals that there is no systematic reliance on nearby courts.

To verify these results, I also randomly sampled several cases during the 1960s and '70s to determine whether the nature of the citations differed between the early years and the later years. All of the citations in the 1960s were First Amendment cases. The citations to state supreme court precedent were used to offer examples in which other courts reached similar conclusions or to distinguish how a set of facts changed the scenario. The same pattern continues in the 1970s. State supreme courts

cite the precedent of other courts to explain or confirm its own findings. For example, in a First Amendment defamation case, Colorado asked whether a statement of public interest is a matter of fact and a question for the jury, or whether it is a legal issue which the court can decide. Colorado determined that it was a question of law for the court to decide. To substantiate its claim, the Colorado Supreme Court relied on a Florida case. Colorado stated "The cases which we have read either hold or assume that this is a question of law for the court . . . [Florida] specifically so held."[2]

Two separate family law cases required the courts to examine how courts in other states have applied specific doctrines. In 1975, New Hampshire grappled with what the proper grounds were for divorce. This question, the court stated "is the product of a national discussion' and turned to other states also deciding this issue.'[3] New Hampshire cited a Florida decision, several state statutes, and law review articles in order to afford the parties adequate due process of law.

A 1972 case in North Carolina questioned the doctrine of parental immunity when the estates of two daughters brought a negligence claim against the estate of their father after all three died in a motor vehicle collision.[4] Similar to the New Hampshire case, North Carolina reviewed states' application of the immunity doctrine. In its analysis, North Carolina cited six state supreme court precedents.

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[2] *Wesley W. Walker and Katherine L. Walker* v. *The Colorado Springs Sun, Inc., William J. Woestendiek, Doyle Trent and Spencer A. Simco,* 538 P.2d 450 (Colo. 1975).

[3] *Dana A. Desrochers* v. *Real J. Desrochers*, 347 A.2d 150 (N.H. 1975).

[4] *Bobby L. Skinner, Administrator of The Estates of Beverly Kay Skinner, Deceased, and Sandra Gail Skinner, Deceased* v. *John L. Whitley, Administrator of The Estate of Clyde Wesley Skinner*, 189 S.E.2d 230 (N.C. 1972).

One final note regarding out degree is important. North Carolina is not alone in citing many precedents in a single opinion. Four of the ten citations in the 1960s come from the same Nevada case.[5] Although all of the 1960s cases are First Amendment issues, Nevada is a frequent citer; it also has the highest out degree measure for judicial conduct. Of the ninety-seven citations in the 1970s, only fifty-five are unique. The remaining forty-two citations come from the same case. In other words, one decision often produces many out-of-court citations.

5.3 Citation Paths

Because the citations evolve over time and are acyclic—that is there is no way for the connections to form a complete circle or for the links to loop back to the original node—we can trace the paths that connect state supreme courts. In this section, I follow the sequence of citations beginning with the Missouri State Supreme Court.

Missouri Supreme Court cited only three other courts for judicial conduct cases. What courts did Missouri cite? And when? The earliest—and only—time that Missouri became active in the judicial conduct network was in 1997 in *In Re Frank A. Conard*, a case involving a showdown between a judge and police chief.[6] Judge Conard was unaware of local custom to keep defendants locked up for twenty-four hours and ordered the chief to release a defendant who was in custody for domestic

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[5] *Vegas Franchises, Ltd., a Limited Partnership, Dba Steak Corral* v. *Culinary Workers Union, Local No. 226, et al.*, 427 P.2d 959 (Nev. 1967).

[6] *In Re Frank A. Conard*, 944 S.W.2d 191 (Mo. 1997).

violence. After initially defying the judge's order and facing contempt charges for failing to obey, the chief relented, released the prisoner, and then complained to the media about the incident. In retaliation for the police chief speaking to the press, and despite the fact that the police chief complied with the judge's order, Judge Conard filed criminal contempt charges against the chief. The judge also spoke to reporters about both the police chief and the defendant's cases. The Missouri judicial commission found Judge Conard guilty of misconduct and the judge appealed.

Legally, this case did not present the supreme court with any particularly challenging issues. The supreme court reiterated the very lengthy factual basis for the claim and agreed with the commission's finding of misconduct. Besides references to the Model Code of Professional Responsibility, the court rarely cited any of its own caselaw. Only two instances necessitated legal analysis and both resulted in citations to other state supreme courts. First, while judges are not generally barred from speaking to the press, they cannot discuss substantive issues regarding pending cases. There are, however, two exceptions to this rule: (1) Judges can explain procedural matters; and (2) they can explain their position if publicly attacked. To justify the court's application of this second exception, the court discussed a 1988 Minnesota Supreme Court case that carves out a qualified privilege for judges to respond or explain their position.[7] The court adopts this privilege but found that the judge discussed with

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[7] *In re Miera*, 426 N.W.2d 850, 857 (Minn. 1988). Interestingly, the Minnesota court borrows the qualified privilege from the dissent of a Florida Supreme Court case. *In re Kelly*, 238 So. 2d 565 (Fla. 1970), cert. denied 401 U.S. 962 (1971), rehearing denied 403 U.S. 940 (1971).

reporters specific charges in violation of the Code of Professional Responsibility.

The next two out-of-jurisdiction citations occurred at the very end of the opinion when the court considered punishment for the judge. The state judicial commission suspended Judge Conard without pay for ninety days, but the court thought this punishment was too harsh. In order to reduce the judge's punishment, the court identified several mitigating factors and relied on a 1982 Florida case and a 1974 California case.[8] Both the California and Florida courts reduced the judicial commission's censure because the judges were relatively new to the bench. In a custody case, the judge from Florida personally visited a woman's home several times, policing for any "overnight visitors for sexual purposes." Despite this and other misconduct, the Florida Supreme Court excused his behavior because it occurred early in his judicial career. They argued he had been "an aggressive trial lawyer" who needed to learn how to temper his behavior. The Missouri Supreme Court relied on this case to reduce Judge Conard's suspension to thirty days without pay. Similar to both the Florida and California judges, Judge Conard was in his first year on the bench.

In all of its judicial conduct cases from 1960–2010, the Missouri Supreme Court only cited three other state supreme courts and all of those citations occurred in the same case. Figure 5.5 illustrates Missouri Supreme Court's citation paths. The figure plots the time at which each state supreme court was cited (the x-axis) and the number of steps removed from the original court (the y-axis) (Bender-deMoll 2016).

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[8] *McCartney* v. *Commission on Judicial Qualifications*, 526 P.2d 268 (Cal. 1974). *In Re Turner*, 421 So. 2d 1077 (Fla. 1982).

The first time a court makes a citation to a fellow state supreme court, the figure places that court at time 0. Since we are examining Missouri's citation path, Missouri is located at 0,0 in the plot. Missouri directly cites Minnesota, Florida, and California, placing those courts one-step up the y-axis from Missouri.

Tracing the citations that occurred after Missouri's 1997 *Conard* case, California did not cite any other state supreme courts. As you can see if Figure 5.5, California's path ends at around time 37, which corresponds to 1997, the year of the Missouri case. Florida's next out-of-state citation occurs in 2010.[9] As the figure depicts, a line extends from Florida to Nevada. Nevada is located at time 50 (year 2010), and it is two steps away from Missouri, so it situated higher than Florida. Since my data ends in 2010, Nevada does not have an opportunity for any further citations.

Minnesota, however, is very active post-*Conard.* It cites six state supreme courts (New York, Wisconsin, Nebraska, Arkansas, Illinois, and New Jersey). Those cases all occur after 1997 and are arranged along the x-axis corresponding to the year they were published. As you can see, Arkansas published a case first (in 2003) and Nebraska last (2007). All six of these courts are two steps removed from Missouri. Citations can be further traced from all of those courts. The longest path moves from Missouri to Minnesota, to New Jersey (2004),[10] to Washington (2006),[11] to Mississippi

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[9] *Inquiry Concerning A Judge, No. 07-64 Re: Ralph E. Eriksson*, 36 So. 3d 580 (Fla. 2010). Florida cites *Mosley* v. *Nevada Commission on Judicial Discipline*, 22 P.3d 655 (Nev. 2001).

[10] *Inquiry into the Conduct of the Honorable Harvey C. Ginsberg*, 690 N.W.2d 539 (Minn. 2004).

[11] *In The Matter of Randolph M. Subryan, A Judge of the Superior Court of New Jersey*,

$(2007),^{12}$ to Louisiana $(2008),^{13}$ and to Maine $(2009).^{14}$

Figure 5.5: Judicial Conduct Path from the Missouri Supreme Court
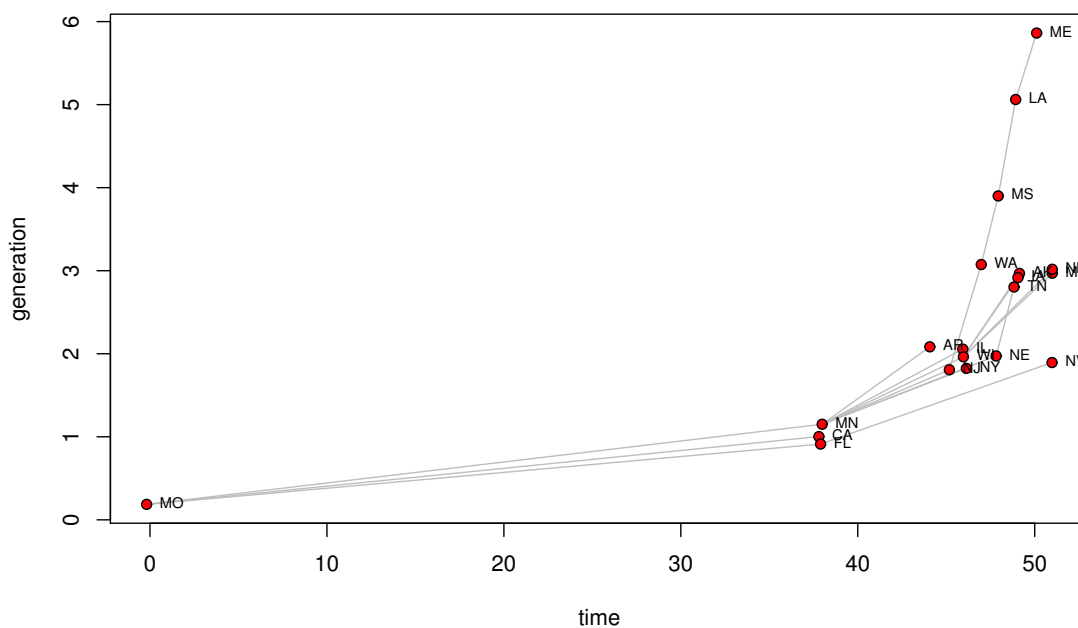
Although the cases do not refer to the previous case, tracing their paths is in-

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A.2d 809 (N.J. 2006).

[12] *The State of Washington* v. *Scott Chamberlin*, 162 P.3d 389 (Wash. 2007).

[13] *Mississippi Commission on Judicial Performance* v. *Solomon C. Osborne No. 2007-JP-00776-SCT*, 977 So. 2d 314 (La. 2008).

[14] *In Re: Judge Timothy C. Ellender*, 16 So. 3d 351 (La. 2009).

structive. The sequence of citations are restricted temporally. As discussed in Chapter 4, the citations are acyclic; there is no way for the courts' citations to form a complete circle, or for the links to loop back to the original court. The path in Figure 5.5 illustrates this. Each of the citations that occur after Missouri cited Florida, California, and Minnesota, occurred post-1997. Moreover, each of the cases the courts cite were published in a prior year. For example, Louisiana cites a 1990 Maine Supreme Court case. Thus, the connections between any numbers of nodes will never be closed because one cannot cite an opinion that has not yet been published.

5.4 Conclusion

This chapter uses state supreme court networks to contribute to the study of judicial decision-making. The combined laws analysis reveals broad patterns in the state supreme court citation network. Unpacking the laws into the individual legal issue areas and applying network centrality measures illustrates how complex it is to identify a single state supreme court leader.

The longitudinal analysis also sheds new light on courts' citations practices. Since the 1960s when there was very little citation activity between the courts; in degree, out degree, betweenness, and density have all increased. Substantively, this means courts have become more connected over time.

Courts learn from and rely on their fellow state supreme courts. When the courts look for answers or want support for a decision, the courts turn to other state supreme courts for guidance. To whom the courts turn depends on how we measure

connectedness. It also depends on the particular area of law. This chapter helps to identify the key courts and the behavior of those courts to better understand judicial decision-making.

CHAPTER 6
CONDITIONS FOR CITATION

At its core, this dissertation asks how and why citations form. This chapter is dedicated to answering part of that question. Specifically, it examines under what conditions do state supreme courts cite other state supreme courts. I divide the hypotheses in this chapter into two categories: actor attributes and network effects. I consider observable state and court attributes, drawn from the diffusion literature, as well as endogenous relationships that occur between the courts.

I test the hypotheses two ways. First, I apply a network inferential model (TERGM). I then compare those results to a dyadic logit model. I find that only by combining policy diffusion and network theory and methods can we accurately capture the complex state supreme court social system.

6.1   Theory and Expectations

Diffusion research argues that most members of the system rely on the innovative decisions of others to determine how a policy spreads among its population. A number of characteristics affect policy adoption, including regional, cultural, political, institutional, and economic factors. These features typically address the actors' resources, motivations, and geographic proximity, among others. Other less visible factors are also present. Actors can have multiple relationships, and these relationships affect the spread of an innovation. Network theory offers additional testable explanations of the diffusion of citations.

Although courts are unique environments, the general policy diffusion literature has identified many factors that influence policy adoption. The variables fall into two categories. The first is based upon the attributes of the actors or internal determinants, and the second category is based upon structural variables. In their examination of state lottery adoptions, Berry and Berry (1990) argue that scholars should not treat the internal determinants and regional diffusion as pure, distinct models. Rather, they argue that only when the two theories are integrated can we begin to understand patterns of diffusion. Following their lead, I integrate both internal and regional diffusion models, with a twist: I add network relationships. I argue that only then, with all three, can we truly begin to understand the diffusion of precedent.

6.1.1 Actor Attributes, Homophily

Murphy (1964) argued that Supreme Court justices function in a political environment similar to legislators. He reasoned that justices make choices while also considering the preferences of other actors, such as justices, members of Congress, and the president. The political environment includes assessing those individual's attributes and choosing actions based on those observations, i.e., the justices' observation of their environment altered their subsequent actions. Similarly, Walker (1969) explains policy diffusion in part by juxtaposing two actors against one another. In his pioneering policy diffusion study, Walker found that states are more likely to adopt a policy when the decision-makers view the other state as comparable (see also Rogers 2003). Network analysis refers to this concept as homophily.

Homophily represents the idea that shared characteristics are a primary cause of connection between actors. That is, the common trait shared between actors best explains the creation of the relationship. The expression "birds of a feather flock together" represents homophily, and numerous network, organizational behavior, and sociological studies tested the concept (Ibarra 1992; Rogers 1995; Marsden 1988; McPherson, Smith-Lovin and Cook 2001; Aral et al. 2009). It also represents the concept Walker introduced to the state politics diffusion literature in 1969.

Put into the context of the judicial branch, homophily predicts that courts are more likely to cite a court with similar characteristics. State supreme courts are more likely to cite a state supreme court who looks like them, who shares institutional features, demographic characteristics, and ideology. The consequences of homophily can be significant. As I discussed in Chapter 3, the interaction between the current environment and the observation of others affects how information, ideas, and influence spread among courts. If courts only interact with similarly situated courts and states, they reinforce the original court's position. It produces a "people like us" grouping (McPherson, Smith-Lovin and Cook 2001, 416).

In the next section, I turn to the specific factors I use to measure homophily: internal determinants and regional diffusion. Throughout both subsections I assert the following generalized hypothesis: state supreme courts will cite other state supreme courts that look like them.

6.1.1.1   Internal Determinants

Shared political, economic, and demographic characteristics are common explanations for policy adoption. Many of policy diffusion's general internal determinants are derived from Walker's (1969, 883) "slack resources." An excess of these resources—in the form of professional staff, money, state size, and population—represent states that can afford to invest in innovations (Shipan and Volden 2006). Several scholars extended this idea to ideology (Grossback, Nicholson-Crotty and Peterson 2004), as well as economic and population (Volden 2006) and institutional features (Canon and Baum 1981; Glick 1970; Grattet, Jenness and Curry 1998). Here, I look to these factors and more to capture how the learning court compares itself to the model court.

I take two approaches to measure similarity or homophily. For each technique, I rely on the dyadic approach discussed in the previous chapter, in which I pair two state supreme courts or states together. One state supreme court—the learning court—cites or learns from the second state supreme court—the model court. To determine whether homophily is present, in the first approach I calculate the absolute difference between the two states or courts in the dyad. In the second technique, I create an indicator variable that takes a value of 1 when the two states or courts in the dyad share the characteristic and 0 when they do not.

There are many ways to measure similarity. Ideology plays an important role in judicial decision-making. Segal and Spaeth's (2002) attitudinal model, as noted in Chapter 2, is a function of ideology. Simply put, conservative justices vote conservatively and liberal justices vote liberally. Ideology also plays an important role on state

supreme courts. At state politics level, studies have shown that states with similar ideologies adopt the same policies (Grossback, Nicholson-Crotty and Peterson 2004; Volden 2006). Thus, when a state supreme court choses a case to cite, it will choose to cite a court's opinion that is compatible with its own ideology. Courts will be more likely to cite state supreme courts that are ideologically congruent.

I include two variables to test for similar political characteristics. The first looks at the court's ideology. I employ Bonica and Woodruff's (2015) measure of supreme court justices' ideology. They create a common-space score for state supreme court justices based on campaign finance data, where negative scores indicate liberal ideology and positive values indicate conservative ideology (see also Bonica 2013, 2014). *Court Ideology Difference* takes the absolute difference between the median justices of the two courts in the dyad. I hypothesize that a court will be more likely to cite a court that is ideologically similar to it.

> **Hypothesis 3. *Judicial Ideology:*** *State supreme courts will cite state supreme courts whose justices are are ideologically similar.*

The second political variable, *Citizen Ideology Difference*, measures states' citizens' ideology. It adopts Berry et al. (1998) citizen ideology score, which is based on congressional races' election results, interest group ratings of members of Congress, and the party that controls the state legislature and governor. Of the two states in the dyad, this variable takes the absolute difference between the citizens' ideology. If the ideology of the states of the two courts is similar—both are moderate, conservative, or liberal—the variable will be small. If the variable's coefficient is negative, then the

court is citing a state whose citizens are ideologically similar. I expect that courts will be more likely to cite courts from states that whose citizens are ideologically similar.

Hypothesis 4. *Citizen Ideology: State supreme courts will cite state supreme courts whose citizens are ideologically similar.*

Institutional rules and design of the judicial branch may affect a state's decision to cite another state. For example, the presence or absence of an intermediate appellate court may affect the court's citation practices because the intermediate appellate court frees up the docket of the supreme court, which allows it to hear the cases it desires (Canon and Jaros 1970; Handberg 1978; Glick and Pruet 1986; Hall and Brace 1989; Brace and Hall 1990). Scholars have show that institutional similarities, such as judicial selection mechanisms, increase policy adoption (Canes-Wrone, Clark and Kelly 2014; Brace and Hall 1995), (but see **?**Sheldon and Lovrich 1981). It is not unreasonable to extend this logic to state supreme court justices.

Scholars have long demonstrated that judicial selection mechanism influences judicial decision-making (Hall 1992; Hall and Brace 1992; Brace and Hall 1990; Hall and Brace 1989; Hall 1987). For example, Huber and Gordon (2004) show that Pennsylvania trial court judges assign longer sentences as the judges' reelection date approaches. Just as judges and state legislators fear electoral retribution, state supreme court justices retained by elections may also consider citizens' preferences before overturning statutes (Brace, Hall and Langer 2001; Grossback, Nicholson-Crotty and Peterson 2004). In 2010, a year after the Iowa State Supreme Court unanimously ruled the state's ban forbidding same-sex marriage was unconstitutional, Iowa voters ousted

the three supreme court justices who were seeking to retain their positions.[1] Voters punished the justices for their votes in the *Varnum* decision.

The method of judicial selection—retention, governor appointed, partisan election, non-partisan election—may also affect whether a state is likely to engage in out-of-state citation practice and to whom the court turns (Canes-Wrone, Clark and Kelly 2014; Brace and Hall 1995). Figure 6.1 illustrates state supreme courts' initial selection mechanism. To capture these institutional rules and design effects, I include an indicator variable, *Same Judicial Selection Method.* In keeping with homophily effect, I predict that a state supreme court is more likely to cite a state supreme court that shares the same type of judicial selection method. The variable takes on a value of one when the courts in the dyad possess the same judicial selection mechanism, and zero otherwise.

Figure 6.1: Judicial Selection Mechanism

Partisan Election Non–Partisan Election Missouri Plan Leglislative Appointed Governor Appointed

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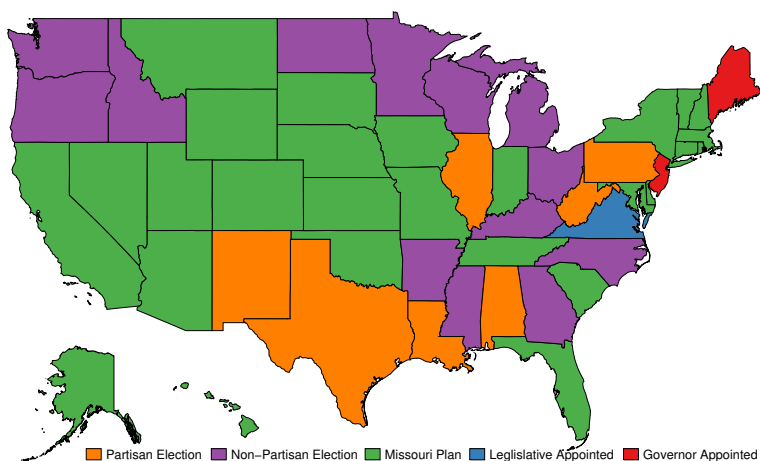
[1] *Varnum* v. *Brien*, 763 N.W.2d 862 (Iowa 2009).

Hypothesis 5. *Judicial Selection Mechanism: State supreme courts will cite state supreme courts that share the same judicial selection mechanism.*

I also considered incorporating measures of reputation, professionalization, and judicial innovativeness (compiled in a dataset by Lindquist 2007). Court reputation represents a count of the number of times a state court cites decisions by other courts (Caldeira 1983). Canon and Baum (1981) created an innovativeness score based on the timing of a state court's adoption of twenty-three tort laws; higher scores indicate more innovativeness. Finally, much like his legislative professionalism score, Squire (2008) created an index of state supreme court professionalism, which includes judicial salaries, agenda control, and number of law clerks.

Many recent studies incorporate these measures (see, e.g. Hinkle and Nelson 2016). However, these measures are only available for a single year: 1974, 1981, and 2004, respectively. Scholars often extrapolate these indices to their time of interest and hold the value constant in their data, even scholars whose work includes more than a single year and regardless of the time period. Since my research spans fifty years, a time invariable score is unsuitable. When I did include the measures in the models, however, innovativeness was not statistically significant in any of the models. Caldeira's (1983) reputation measure was statistically significant in family law, and Squire's professionalism score was significant in the First Amendment model. Since I am looking for parsimony as well as uniformity across the models, I do not include any of these variables in the final analyses.

Returning to Walker's (1969) notion of slack resources, I include three vari-

ables—total population, real personal income, and gross state product—to capture demographic characteristics of the two states. These variables are again intended to capture state-level homophily characteristics. I expect that large populated states will cite large populated states (Harris 1985), and wealthy states will cite wealthy states.

> **Hypothesis 6.** ***Population:*** *State supreme courts will cite state supreme courts whose states have similar population.*

The first, *Population Difference*, looks at the population of the two states. The first Population Difference is the absolute difference between the two states' total populations in the dyad. If the states have similar populations, this coefficient should be small and have a negative value. The next two variables examine the economies of the two states in the dyad. *Gross State Product Difference* is the absolute difference between the two states' economic output. The second economic variable, *Personal Income Difference*, looks at the real personal income of the citizens in the states. Real personal income also takes the absolute difference between the two states in the dyad. For both variables, if the states have similar gross state product or personal income, the variable should be small and have a negative coefficient.

> **Hypothesis 7.** ***Citizens' Income:*** *State supreme courts will cite state supreme courts whose citizens have similar real personal income.*

> **Hypothesis 8.** ***State Economic Output:*** *State supreme courts will cite state supreme courts whose states have similar gross state product.*

6.1.1.2 Regional Diffusion

Regional diffusion explores the commonalities of neighboring states. The external determinants most likely to have an effect on state legislative policy diffusion are contiguous neighbors (Walker 1969) and geographic region (Mooney 2001). Like state legislatures, courts' neighbors and regions may also affect courts' precedent choices. Geographic proximity, common regional court reporting district, and shared federal circuit region have been shown to increase the probability of diffusion (Harris 1985; Caldeira 1985; Bird and Smythe 2008) (but see Canon and Baum 1981). Just as with internal determinants, I expect that courts will cite courts with whom they share geographic features.

The federal court system in part defines courts' borders and whom they consider neighbors. Bird and Smythe (2008) find that federal appellate circuits are the most important in the diffusion of wrongful-discharge laws across the states. They argue that legal institutions are more important than geography for court diffusion.

Yet the federal circuits combine institutional and geographical elements. There are thirteen federal appellate courts, also known as circuit courts. All of the circuits, except one, are based on geographic regions of the country. Washington, D.C. has its own federal court of appeals (the "D.C. Circuit"). The thirteenth circuit, the Federal Circuit Court of Appeals, is unique in that its jurisdiction is not based on geography, but rather is exclusively based on subject matter jurisdiction. This means that the Federal Circuit can hear a case from anywhere in the country, unlike the other circuits which are limited to hearing cases from their own regions. Figure 6.2 is a map of the

eleven regional circuits.

Figure 6.2: Map of the Federal Circuit Courts of Appeals
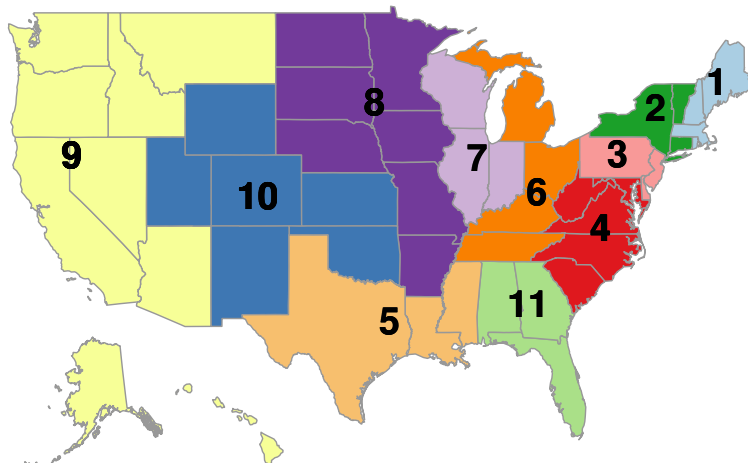
While the federal circuits do not review state supreme court decisions—only the U.S. Supreme Court may review state supreme courts' interpretation of the U.S. Constitution and federal laws—the circuits do routinely hear appeals on federal question issues. When a state supreme court is seeking information on how to interpret constitutional issues, the federal circuit courts produce significantly more cases from which to learn than the Supreme Court.

State supreme courts have a choice of which federal circuit to cite. Since each state sits within a single federal circuit, the cases that make up a circuit's docket include cases and litigants from their own state. Therefore, I expect that a state supreme court is more likely to choose the precedent of a state supreme court who

shares the same *federal circuit* than one who does not.

> **Hypothesis 9. Federal Appellate Courts:** *State supreme courts will cite state supreme courts that sit in the same federal appellate circuit.*

In a series of separate models, I also tested a number of other possible regions that might affect the diffusion patterns. The publishing company, West, created a legal regional reporting system and publishes state supreme court opinions for all 50 states. West divides the country into seven regions: Atlantic, North Eastern, North Western, Pacific, South Eastern, South Western, and Southern. A map of the West reporting regions is included in Appendix B, Figure B.1. Although Harris (1985) and Caldeira (1985) find that the different court reporter legal regions are more important than geography, I do not find West Reporter to be statistically significant and do not include the variable in the final analyses. See the results in Appendix B Table B.1. This confirms my findings in Chapter 5.

Another way to conceive of similarity is whether two states share a border. Studies have shown that geography has an enduring effect on a state's disposition to adopt a policy and its subsequent patterns of diffusion. Geographic proximity affects both state officials and residents' ability to learn from and react to policies in neighboring states (Pacheco 2012). The learning state's closeness to the innovating state increases the probability that the learning state will innovate and adopt the policy (see e.g., Walker 1969; Berry and Berry 1992; Mooney 2001).

Just as state legislators measure their accomplishments by comparing themselves to their neighboring states, state supreme court justices likewise look to their

neighbors as a baseline against which to judge their performance. Since contiguous neighbors have a significant effect on a state legislature's probability of adopting an innovation, it seems likely that this should influence state supreme courts as well. A court will know its own previously decided cases and that of its federal circuit because they will generally decide cases in the same manner. Most states that share a federal circuit also share a contiguous border. Moreover, contiguous states are likely to share not only similar geographic features, but also cultural and economic characteristics. I expect that sharing a geographic border will positively influence precedent. A summary of the variables and their expected effects is included in Table 6.1.

> **Hypothesis 10. Contiguous Border:** *State supreme courts will cite a neighboring state supreme court.*

6.1.2   Network Effects

State variables alone cannot explain how and why citations occur. Citations between courts are a way of exchanging information. At its core, a citation is a latent indication that the case being cited is substantively similar (Caldeira 1988; Martin et al. 2013). When two cases share similar subjects, it increases the probability that a citation might occur.

6.1.2.1   Reciprocity

Measures of highly connected courts can also lead to discovering additional relationships. Given that the citation is directed, it is possible that if court A cites a decision from court B, court B will *reciprocate* or cite A in return. Figure 6.3 illus-

trates this concept. If Iowa cites California, represented by the dark black arrow, will California return the favor by citing Iowa? Reciprocity is grounded in the belief that friends strongly influence each other because they reinforce one another's behavior Rees and Pogarsky (2010), and it can produce increased citations between the courts. The likelihood of citation can be based on the attributes of the learner court, the model court, or shared between the learner and model court.

Figure 6.3: Reciprocity

Beyond friends, reciprocity is common between retailers and shoppers. For example, Costco abundantly offers free samples to its members.[2] Retailers offer free samples because there is a surprising amount of psychology behind the giveaway. When given something or when someone does something for you, people feel strongly that they must do something in return (Heilman, Lakishyk and Radas 2011). Reci-

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[2]In fact, some shoppers consume whole meals by eating enough free samples. See, e.g., http://www.freemoneyfinance.com/2009/01/can-you-pay-for-a-costco-membership-by-eating-free-samples.html and http://www.nbcnewyork.com/news/local/Food-Blogger-Spends-Week-Eating-Only-Free-Samples.html.

procity works for retailers like Costco because individuals often feel compelled to purchase the item they received via free sample. I argue that this concept applies to courts as well. When a court receives a citation from another court, the court is going to feel compelled to return a citation to the court, i.e., it will reciprocate the citation.

Hypothesis 11. Reciprocity: *State supreme courts will not reciprocate citations within the same year.*

Reciprocity assumes that the citation activity occurs in the same year. Yet there is a delay between when a court issues its opinion, when it is published electronically or in print, and finally when another court has the opportunity to search for a similar legal issue. If a state supreme court issues an opinion in November or December, there is very little chance for another court to cite that decision. Relaxing this strict requirement aids this problem. Returning again to the illustration in Figure 6.3, if Iowa cites California in 1990, then California will cite Iowa in 1995, five years later. Five years should allow for plenty of time to make available all decisions while also allowing California the opportunity to hear a case on a similar issue and to cite Iowa in return. Because traditional reciprocity is a tough standard to meet, I hypothesis that reciprocity will be negative or not present in the network. However, I hypothesize that *delayed reciprocity* will be positive.

Hypothesis 12. Delayed Reciprocity: *State supreme courts will reciprocate citations within five years.*

6.1.2.2 Transitivity

The state supreme court network is not limited to citations by and between two courts. A number of other possibilities exist when we step out of the dyadic restrictions imposed by traditional logit and count models and begin to account for complex dependencies (Cranmer, Desmarais and Menninga 2012). A relationship between two courts is likely to have an effect on a third court. If court i is linked with j, and court j is linked to k, then courts i and k are also connected.

More concretely, if the Tennessee Supreme Court cites the Texas Supreme Court, the two courts are connected. And if Texas cites the California Supreme Court, these two courts are connected. Connectivity does not end here; in this scenario, Tennessee and California are also connected. Together, the three courts form a triangle, where each court connects to another. The adage, "a friend of a friend is my friend" $(i \rightarrow j, j \rightarrow k, i \rightarrow k)$, captures this phenomenon known as a transitive triple.

Figure 6.4: Transitivity

The Tennessee Supreme Court was faced with a legal question it had never decided: whether state government officials are absolutely immune from defamation claims that arise while performing their official duties.[3] While analyzing absolute privilege, Tennessee discussed a Texas case that adopted absolute privilege as applied to the Texas Attorney General. In reaching its decision, the Texas Supreme Court cited a California Supreme Court case.[4] This is an example of transitivity. Tennessee cited Texas, $i \rightarrow j$; the Texas Supreme Court cited a California Supreme Court decision $j \rightarrow k$; Tennessee also cited the California case, $i \rightarrow k$. Transitivity occurs when Tennessee cited the California case because of Texas. Put another way, if it was not for Texas citing California, Tennessee might not have cited California. In general, when a citation links two courts, the likelihood that the first court is linked to a third court increases. I hypothesize that *Transitivity* exists in the network and the coefficient will be positive. Thus, I expect that court i's connection is a proximate cause of court k's citation practices (see e.g., Weerman and Smeenk 2005; Rees and Pogarsky 2010).

> **Hypothesis 13. Transitivity:** *Transitivity exists in the citation networks.*

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[3] *Zoyle Jones* v. *State*, 426 S.W.3d 50 (Tenn. 2013).

[4] "All of the state courts that have addressed the issue have agreed that an absolute privilege . . . applies to state attorneys general." *Kilgore* v. *Younger*, 640 P.2d 793, 797–98 (Cal. 1982).

6.1.2.3 Popularity

Highly connected courts are courts that are cited by many other courts. We can think of this in terms of popularity, courts that receive several citations are popular among their peers. Popularity is an endogenous process, if a court receives many citations, other courts may choose to cite that court due to pressure to conform, because everyone else is doing it, or because the case has become the landmark case in a particular area of law. In network analysis, popularity is the number of times when two courts cite the same state supreme court. The two-star statistic measures *Popularity* (Robins et al. 2007). Over time, courts will establish themselves as leaders in certain areas of law. I hypothesize that a court may cite another court simply because it is popular, i.e., it is a leader.[5]

> **Hypothesis 14. Popularity:** *Popularity exists in the citation networks: state supreme courts will cite a state supreme court simply because it is popular.*

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[5]At this time, popularity and transitivity assume the citation activity occurs in the same year. The statistical program I use to run the models, the TERGM package, does not include lagged measures versions of these. Future iterations of this project will include delayed versions of these measures just like delayed reciprocity.

Figure 6.5: Popularity

6.1.2.4 Isolates

Not all courts are going to cite other courts in a given year. For example, the Montana Supreme Court might not have had the opportunity to decide a freedom of religion case in 1999. Although its sister court in Illinois did have a freedom of religion case on its docket in 1999, the Illinois Supreme Court did not cite any of Montana's freedom of religion cases. Not only did Illinois not cite Montana, but also none of the other state supreme courts cited Montana that year. Montana is isolated from the other courts in 1999. In a directed network, isolates are courts that do not cite and are not cited by other state supreme courts. Because a citation is an indication that there is some amount of substantive similarity, and because courts must wait for litigants to file a lawsuit before it has an opportunity to cite other courts (Canon and Baum 1981), I hypothesize that many courts will be isolated from their peers in

a given year. The isolate covariate is a count of the number of *isolates* in a particular network; I expect that this is going to be a positive value. Substantively, more isolates means fewer courts are available to engage in citations.

> **Hypothesis 15. Isolates:** *In any given year, a state supreme court will not cite and will not be cited by a fellow state supreme court.*

6.1.2.5 Temporal Dependencies

In addition to delayed reciprocity, I also include two time dependent covariates: lagged citation and a linear time trend. *Lagged Citation* is an autoregressive term; it tests whether a citation in one year is carried forward to the next year. I expect this term to be positive; suggesting that what a court did last year affects whom it cites the next year. In addition, I check whether citations follow a time trend in the networks, *Linear Time Trend*. Specifically, I test whether there is a linear time trend regarding the number of citations over time. If there is a linear time trend, this variable will be positive. I expect that controlling for time, that is the citations in the previous year, will provide a better model of the citations between the state supreme courts.

6.2 Empirical Approach: Networks

My theory explicitly assumes that the courts depend on one another in its decision-making; therefore, the empirical model must also incorporate this dependence. Scholars often account for the interdependence among the observations by

Table 6.1: Variables and Expected Effects

Category	Variable	Level	Measure	Effect
Time &	Lagged Citation	Network	Citation from previous year carried forward to next time step.	+
Memory	Time Trend	Network	Tests whether the time trend is linear.	+
Terms				
Network	Reciprocity	Network	Number of courts that cite each other during same time period.	−
Effects	Delayed Reciprocity	Network	If a court A cites court B at time 1, whether court B cites court A at time 2.	+
	Transitivity	Network	Number of transitive triples, "friend of my friend is my friend."	+
	Popularity	Network	Number of 2-star formations, when two courts cite a third court, a popularity effect.	+
	Isolates	Network	Number of courts that do not cite and are not cited by others.	+
Actor	Court Ideology	Dyad	Absolute difference between the median justice of the two courts.	−
Attributes	Citizen Ideology	Dyad	Absolute difference between citizens' ideology in the two states.	−
	Population	Dyad	Absolute difference between the populations of the two states.	−
	Real Personal Income	Dyad	Absolute difference between the personal income of citizens of two states.	−
	Gross State Product	Dyad	Absolute difference between the gross state product of the two states.	−
	Judicial Selection Mechanism	Dyad	Indicator variable = 1 when courts share same judicial selection system.	+
	Contiguity	Dyad	Indicator variable = 1 when states in which court sits share geographic border.	+
	Federal Circuit	Dyad	Indicator variable = 1 when two courts share same federal appellate circuit.	+
Model	No. Published	Node	Number of cases the cited court	+
(cited)	Cases		published.	
Court				

calculating robust standard errors, clustering on the dyads. This method treats observations as independent across dyads, but does not account for dependence within dyads (Gilardi 2010). Moreover, a focus on dyads ignores systemic effects as well as political, economic, and social interdependence among and between the states and its courts (Cranmer and Desmarais 2016).

Since the social learning model is interested in the relationships between the courts, which traditional methods are unable to account for, I situate the state supreme courts in a complex network, overcoming the restraints imposed by logistic regression. I directly model the interdependence both between dyads and across time by applying network analysis. My hypotheses are aimed at testing edge and network topology—i.e., how do citations between courts form and re-form and how does a citation between two courts affect a third court—I need something that can model the citations themselves, as well as a framework that can account for the conditional dependencies within the network.

I model the ties between courts using an exponential random graph model ("ERGM"), also known as p* model. ERGMs are especially well suited for complex structures such as the state supreme courts. ERGMs offer an inferential approach to quantify relationships while also relaxing the strict independence assumptions required by traditional OLS and logit models. In the case in which the data generating process is truly independent, the ERGM reduces to a logit model (Cranmer and Desmarais 2011, 2016).[6] ERGMs, and its temporal extension TERGMs, model both the

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[6]For more information and an extended discussion of ERGMs and TERGMs in political

actors (the state supreme courts) and the interactions (the citations) between them. I can also empirically test the relationships between the courts, and across time. The models allow researchers to make inferences on covariates just as in traditional regression methods.

Specifically, I employ a temporal exponential random graph model with boot-strapped pseudo-likelihood ("bTERGM" or "TERGM") (Desmarais and Cranmer 2010, 2012). The TERGM takes a maximum pseudo-likelihood estimation approach; it provides a consistent estimator that is also computationally efficient (Desmarais and Cranmer 2010). The unit of analysis is network-year and each of the iterations resamples with replacement fifty-one networks (1960–2010) (Cranmer and Desmarais 2011). For each of the four models, I use 1,000 bootstrap iterations. The bootstrapped pseudo-likelihood does not provide standard errors, instead it provides confidence intervals for the coefficient estimates.

As discussed in Chapter 4, the dependent variable in the model is the citation network each year. The nodes in the network are state supreme courts and the ties or links between the courts are citations. A citation is coded 1 if state i cites state j in a given year and 0 otherwise. We distinguish a citation from state i to state j from a citation from state j to state i. As explained in the previously, I will analyze four separate networks: judicial conduct, family law, First Amendment law, and a combined or pooled model of citations from each of the three areas of law. The

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science, see Cranmer, Desmarais and Menninga (2012); Desmarais and Cranmer (2010); Cranmer and Desmarais (2016).

network statistics, such as reciprocity and transitivity, are calculated within each legal area.

6.3   Results

Table 6.2 offers the full TERGM results. The table reports coefficient estimates for each area of law as well as 95% bootstrapped confidence intervals. Variables are statistically significant at or beyond the .05 level if their confidence interval does not include zero. The covariate *edges* represents the intercept or constant of a network analysis model. As discussed above, I divide the hypotheses into two groups: network and homophily effects. I also organized the results into the two categories for simplification.

We interpret the coefficients of the network effects differently than traditional covariates. To interpret the network effects, a positive and statistically significant network variable tells us that that effect is present, given the probability of observing the networked we did observe, over the networks we could have observed. A negative statistically significant network variable indicates that the effect is not present, given the probability of observing the network we did observe, over the networks we could have observed. We do not interpret the similarity and model court variables the same way, we interpret these in the same way we would interpret a logit model. A positive and statistically significant variable indicates that that effect produces a greater probability of a citation. The reverse is also true; a negative and statistically

Table 6.2: Testing the Social Learning Model, 1960–2010

Covariates	Family Law			First Amendment			Judicial Conduct			Combined Laws		
	Estimate	2.5%	97.5%	Estimate	2.5%	97.5%	Estimate	2.5%	97.5%	Estimate	2.5%	97.5%
Edges	**-4.419***	-6.071	-3.391	**-3.898***	-4.533	-3.300	**-4.915***	-5.579	-4.248	**-4.355***	-4.931	-3.966
Time & Memory Terms												
Lagged Citation	**2.486***	1.788	3.067	**-0.955***	-13.964	-0.143	**0.936***	0.512	1.252	0.186	-0.286	0.537
Linear Time Trend	**0.039***	0.018	0.073	**0.010***	-0.002	0.022	**0.045***	0.031	0.062	**0.036***	0.026	0.056
Network												
Reciprocity	**-1.549***	-14.854	-0.584	**-1.712***	-14.872	-0.818	**-0.892***	-2.695	-0.119	**-0.753***	-1.526	-0.162
Delayed Reciprocity	**-12.725***	-25.689	-16.486	-0.488	-12.606	0.411	-0.258	-1.956	0.452	0.070	-0.216	0.287
Popularity	**-1.098***	-1.888	-0.462	**-0.381***	-0.642	-0.192	**-0.416***	-0.782	-0.219	**-0.407***	-0.503	-0.328
Transitivity	-0.709	-1.673	0.045	-0.215	-0.604	0.718	**0.591***	0.209	0.822	**0.642***	0.552	0.724
Isolates	**2.085***	1.765	2.400	**1.527***	1.307	1.747	**1.528***	1.311	1.793	**0.966***	0.800	1.124
Similarity												
Court Ideology Difference	-0.010	-0.263	-0.218	0.065	-0.061	0.183	-0.004	-0.169	0.150	-0.019	-0.105	0.068
Citizen Ideology Difference	0.002	-0.007	0.012	-0.003	-0.011	0.003	0.005	-0.003	0.012	-0.002	-0.005	0.002
Population Difference	-0.060	-0.011	0.137	-0.021	-0.054	0.009	**0.057***	0.005	0.102	0.018	-0.017	0.060
Real Personal Income Difference	0.007	0.062	0.065	0.018	-0.016	0.049	-0.022	0.053	0.002	0.000	-0.000	0.000
Gross State Product Difference	-0.001	-0.003	0.000	0.000	-0.000	0.001	**-0.001***	-0.002	-0.000	-0.000	-0.002	0.001
Same Judicial Selection Method	0.055	-0.254	0.350	0.052	-0.106	0.202	**-0.262***	-0.495	-0.060	-0.047	-0.143	0.044
Contiguous Neighbors	-0.241	-0.772	0.155	-0.009	-0.345	0.252	0.168	-0.079	0.390	0.085	-0.034	0.191
Shared Federal Circuit	-0.003	-0.415	0.337	-0.192	-0.518	0.079	-0.036	-0.385	0.212	0.048	-0.097	0.179
Model (cited) Court												
No. of Cases Published	0.001	-0.008	0.008	**0.009***	0.003	0.015	**-0.013***	-0.021	-0.005	**-0.003***	-0.005	-0.001

A * and **bold font** indicates that variable is statistically significant at or beyond the 0.05 level.
Confidence intervals are based on 1,000 bootstrap iterations.

significant variable indicates that the effect is less likely to lead to a citation.

Overall, the similarity variables are not statistically significant in the models, but the network measures are. Reciprocity and popularity are negative and statistically significant in all four models. Substantively, negative 2-star popularity means that states do not receive citations from two or more states at the same time. This lends further support to the social learning model. Since leaders are not emerging and courts are not citing the same court repeatedly, it suggests emulation is not taking place. Reciprocity was negative as expected, negative reciprocity means that if court A cites court B, court B will not reciprocate or return the citation to court A in the same year.

Delayed Reciprocity is negative and statistically significant in only one legal issue. Not only does reciprocity not occur in the given year, but also courts do not reciprocate within 5 years in family law cases. Not all network effects are negative. Transitivity is positive and statistically significant in the judicial conduct and combined law models. Substantively, this means citations between two courts leads to citations to a third court.

The temporal dependency covariates also produce some interesting results. All four models exhibit a linear time trend as indicated by the positive and statistically significant effects. The lagged citation covariate, which means that courts carry a citation in one year forward into the next time step, is statistically significant in three models, but the signs are not consistent. Lagged citation is positive in family law and judicial conduct, but negative in the First Amendment model. The positive

lagged citation in Family Law and Judicial Conduct tells us that a citation in the previous year affects a court's citation practices in the current year.

None of the similarity covariates are significant and cannot be distinguished from zero in the family law, First Amendment, and combined law models. In the judicial conduct, only three homophily variables are significant: population, gross state product, and same judicial method. Same Judicial Selection Method is statistically significant and negative, this means sharing judicial selection method is less likely to produce a citation.

Since the coefficient for gross state product is negative, statistically significant, and small, it supports the homophily hypothesis. In judicial conduct cases, a court is more likely to cite a court with a similar gross state product. Population Difference is statistically significant and positive, indicating that a court does not cite courts with similar total populations.

To test whether the effects were driven by more (or less) populous or wealthy states, I also included variables to capture effects of each of the two states in the dyad, the cited court and the citing court. The first, *Model Court Population*, controls for the population. The second, *Model Court Gross State Product*, controls for the cited state's gross state product. The final variable, *Model Court Personal Income*, controls for the real personal income of the citizens in the model state. Together these variables control for the fact that some states may be more likely to be leaders due to economic or population benefits (Volden 2006). I also include the population, gross state product, and real personal income for the learning court (i.e., the citing court)

again because certain resources may make a court more likely to cite other state courts' opinions. The results are included in the appendix in Table B.1. All but one of the variables fails to achieve statistical significance, further demonstrates temporal effects.

My remaining homophily hypotheses are not supported. Although contiguous borders are an important factor in diffusion studies, they are not statistically significant in any of the models. The results show that when state supreme courts look guidance, they do not learn from their contiguous neighbors. Similarly, sharing a federal appellate circuit is not statistically significant. Courts do not cite courts who have the same judicial selection system, contrary to expectations. Finally, state supreme courts do not cite courts whose justices or citizens share ideology. Overall, there is no support for the similarity hypotheses.

6.3.1   Interpretation

The probability that one state supreme court cites another state supreme court is a dyad-level question that we can estimate it. Let's look at Texas as an example. Texas is not neighbors with either Mississippi or Massachusetts; however, Texas and Mississippi are both members of the Fifth Circuit for federal court appeals. Comparing the two dyads, an observer would assume that Texas would be more likely to cite Mississippi than Massachusetts because they share more features. Both are southern states and share similar elite and citizen ideological values, key traits of the similarity hypothesis. However, as the results in Table 6.2 exemplify, this hypothesis

is not accurate.

The probability that Texas cites Massachusetts varies considerably over the years, as Figure 6.6 illustrates. I suspect that this variation is due to changes in the network and time operating simultaneously. As Figure 4.2 in Chapter 4 and Figure 5.1 in Chapter 5 illustrate, the frequency of citations changes over time. Figure 4.2 especially demonstrates how the citations rise and fall over time. Figure 6.6 captures the essence of those figures. Although other covariates are also changing over time, the non-significant results in Table 6.2 suggest that those variables are not driving the movement seen in the figure.

Pooling the areas of law into one, Texas had a twelve percent probability of citing Massachusetts in 1998, its greatest likelihood over time. The probability that Texas cites Mississippi is even smaller. Again looking at 1998 for comparison, Texas has only a three percent chance of citing Mississippi. We can conclude that Texas is more likely to cite Massachusetts than Mississippi. This figure visually depicts the results in Table 6.2, homophily is not the mechanism compelling the citation patterns.

Figure 6.6: Probability of Citations of Combined Laws

(a) Texas Cites Massachusetts

(b) Texas Cites Mississippi
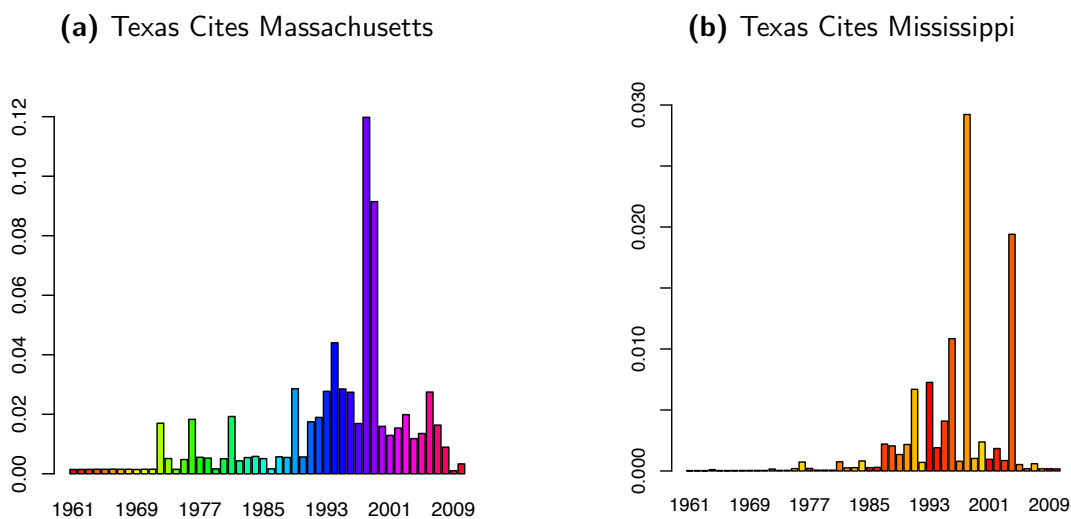
6.3.2 Fitting the Models

Before moving on, it's important to examine how well the data fit the models. Figures 6.7–6.10. displays goodness of fit plots. The plots compare the values of the observed data with simulated models for distribution of dyad-wise shared partners, in-degree, out-degree, and in-star (popularity). Based on the estimated model, the TERGM's goodness of fit compares 100 simulated networks with the observed network. It utilizes the same fifty-one time steps in the data (1960–2010) for creating the simulations and comparing those simulations with the observed network. The y-axis is the statistic's logit (log-odds) of the relative frequency (Hunter, Goodreau and Handcock 2008). The solid line represents the observed network and the dashed gray line and the box plots represent the simulated network. Overall, the models for all

four models fit the data pretty well, as you can see from the box plots because the solid line goes through the median for the distributions.

Since the citations between the courts are directed, I have chosen to include both in degree and out degree goodness of fit measures, rather than total degree. The dyad-wise shared partner statistic captures whether two courts (linked or not) cite a third court, that is, whether they share a partner. This statistic was included because it forms the basis of the triangles that make up transitivity (Harris 2013). Finally, the incoming k-star statistic examines the robustness of the popularity measure used in the models. The "k" represents the number of citations a court receives.

By comparing the two lines within each graph and across all four models, the models generally fit the data well. The incoming k-star—the popularity measure—offers the poorest fit of the four statistics, but the simulated and observed networks are not too far off. There are some slight differences across the models, but based on these goodness of fit figures, the network statistics offer a reasonable specification of the data.

6.4 Dyadic Logit Model

To examine the robustness of the models, I also test the same hypotheses using a logistic regression model. I argued that the TERGM would model the relationships between the courts better than traditional statistical models. By excluding the network effects, we can directly compare the TERGM and dyadic logit models (Cranmer and Desmarais 2011). Dyadic logit models treat the data generating process as in-

Figure 6.7: Family Law Goodness of Fit
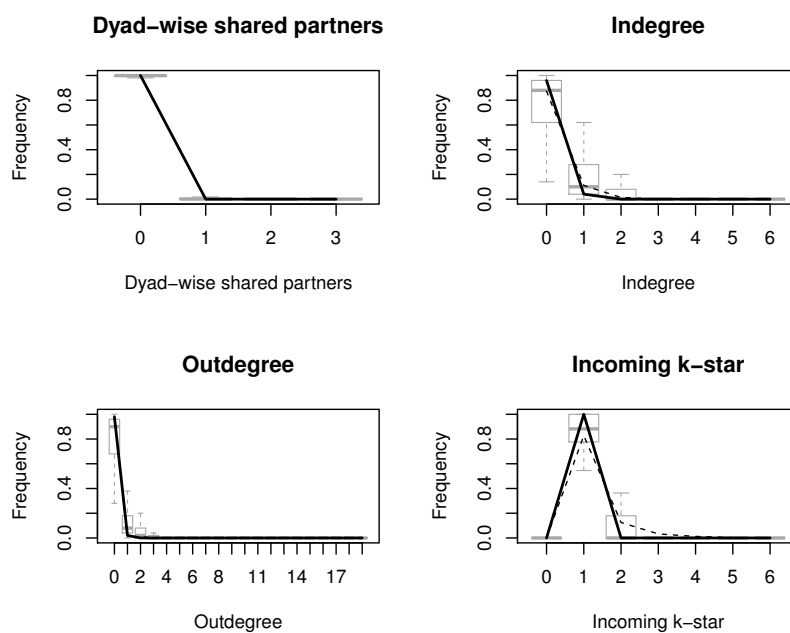
Figure 6.8: First Amendment Goodness of Fit
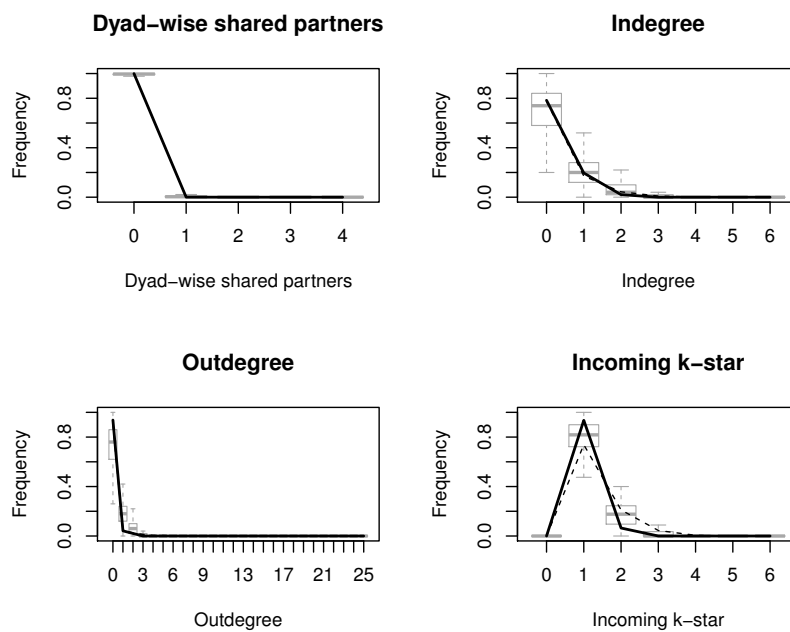
Figure 6.9: Judicial Conduct Goodness of Fit

Dyad−wise shared partners

Indegree

Outdegree

Incoming k−star
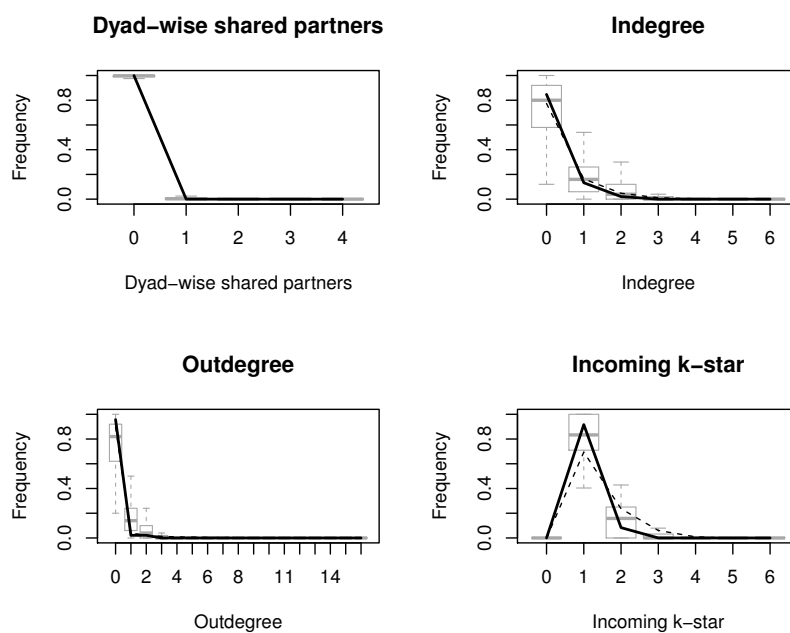
Figure 6.10: Combined Law Goodness of Fit

Dyad−wise shared partners

Indegree

Outdegree

Incoming k−star
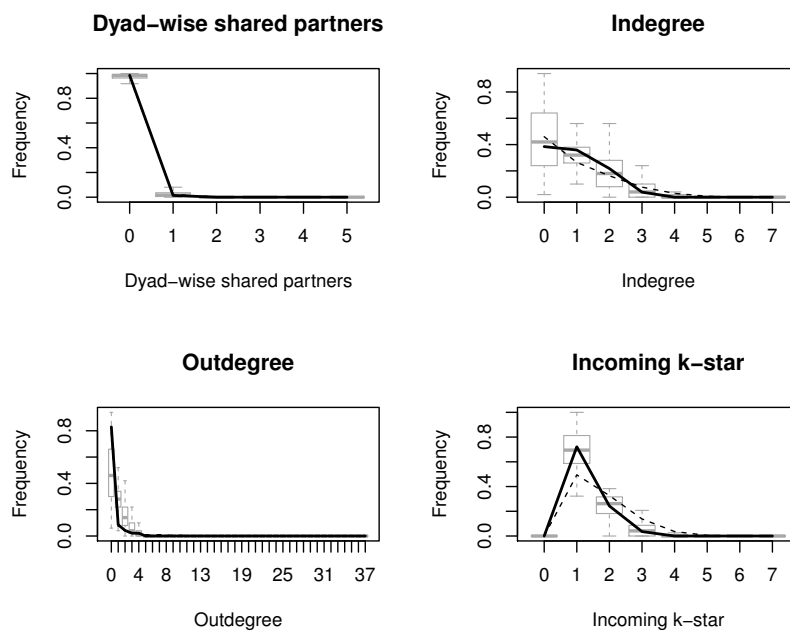
dependent, and since a TERGM reduces to a logit, for consistency, I used the same bTERGM package to calculate the dyadic logistic regression model as I did to run the TERGM models.

The dependent variable is no longer the network, as it is in the bTERGM. The dependent variable is coded dichotomously, $Y_{ijt} = 1$ if state i cites state j at time t, and $Y_{ijt} = 0$ if state i does not cite state j at time t. Just as in the TERGM models, the citation is directed. A citation from state i to state j, Y_{ijt}, is distinguished from a citation from state j to state i, Y_{jit}.

Table 6.3 displays the results of a logistics regression model of the non-network covariates. The table includes all the similarity hypothesis covariates, as well as the time trend and the lagged citation variable. As before, a variable is statistically significant at or beyond the .05 level if the confidence interval does not include zero. In this section, I compare and contrast the TERGM results above with a traditional logistic regression model.

Across all four models, the most striking difference is how many more variables are statistically significant. Four variables that failed to achieve statistical significance in the TERGM, now do. The linear time trend remains positive across all four models, but lagged citation is no longer statistically significant in the combined laws model.

To further investigate the effect time has, I also ran a series of models excluding the time trend and the lagged citation. The results can be found in Table 6.4. These models produce the most striking and troubling changes, there are big changes; in direction and significance. Based on these results, I would find a lot of support for

Table 6.3: Logit Models

	Family Law	First Amendment	Judicial Conduct	Combined Laws
Intercept	**−8.561***	**−6.374***	**−7.832***	**−6.141***
	(−9.984; −7.663)	(−7.086; −5.737)	(−8.719; −7.240)	(−6.722; −5.725)
Time & Memory Terms				
Lagged Citation	**2.962***	0.019	**1.133***	−0.082
	(2.015; 3.681)	(−1.817; 0.892)	(0.630; 1.440)	(−0.571; 0.219)
Linear Time Trend	**0.075***	**0.046***	**0.087***	**0.070***
	(0.053; 0.111)	(0.030; 0.063)	(0.070; 0.113)	(0.059; 0.089)
Similarity				
Court Ideology Difference	−0.117	−0.107	−0.059	**−0.126***
	(−0.338; 0.086)	(−0.237; 0.005)	(−0.237; 0.127)	(−0.233; −0.007)
Citizen Ideology Difference	0.002	−0.006	0.002	−0.004
	(−0.010; 0.013)	(−0.015; 0.003)	(−0.008; 0.011)	(−0.008; 0.001)
Population Difference	0.067	−0.001	**0.067***	**0.068***
	(−0.007; 0.145)	(−0.067; 0.060)	(0.020; 0.111)	(0.037; 0.099)
Real Personal Income Difference	−0.002	0.006	−0.022	0.000
	(−0.067; 0.059)	(−0.036; 0.054)	(−0.065; 0.014)	(−0.000; 0.000)
Gross State Product Difference	−0.001	−0.000	**−0.002***	**−0.002***
	(−0.003; 0.000)	(−0.002; 0.001)	(−0.003; −0.000)	(−0.002; −0.001)
Same Judicial Selection Method	0.117	**−0.217***	**−0.291***	−0.042
	(−0.261; 0.428)	(−0.408; −0.028)	(−0.566; −0.068)	(−0.150; 0.066)
Contiguous Neighbors	−0.232	−0.082	0.118	0.074
	(−0.737; 0.139)	(−0.332; 0.112)	(−0.126; 0.354)	(−0.057; 0.209)
Same Federal Circuit	0.004	0.263	−0.047	0.044
	(−0.431; 0.350)	(−0.028; 0.514)	(−0.392; 0.195)	(−0.150; 0.217)
Model (cited) Court				
No. Cases Published	−0.001	0.002	**−0.014***	**−0.002***
	(−0.010; 0.005)	(−0.006; 0.010)	(−0.023; −0.006)	(−0.004; −0.000)

A * and **bold font** indicates that variable is statistically significant at or beyond the 0.05 level.
Confidence intervals are based on 1,000 bootstrap iterations.

Table 6.4: Logit Models Without Time & Memory Variables

	Family Law	First Amendment	Judicial Conduct	Combined Laws
Intercept	**-5.873***	**-4.980***	**-5.166***	**-3.963***
	(-6.436; -5.409)	(-5.457; -4.588)	(-5.650; -4.769)	(-4.300; -3.696)
Similarity				
Court Ideology Difference	**-0.287***	**-0.256***	**-0.212***	**-0.193***
	(-0.488; -0.127)	(-0.414; -0.120)	(-0.380; -0.046)	(-0.308; -0.090)
Citizen Ideology Difference	-0.003	-0.004	**-0.003***	**-0.008***
	(-0.015; 0.007)	(-0.016; 0.008)	(-0.012; 0.006)	(-0.016; -0.001)
Population Difference	**-0.072***	**-0.096***	**-0.063***	**-0.054***
	(-0.158; -0.010)	(-0.145; -0.056)	(-0.121; -0.017)	(-0.089; -0.028)
Real Personal Income Difference	**0.050***	0.021	0.029	**0.000***
	(-0.022; 0.114)	(-0.016; 0.058)	(-0.022; 0.071)	(0.000; 0.000)
Gross State Product Difference	**0.003***	**0.002***	**0.002***	**0.002***
	(0.001; 0.004)	(0.001; 0.003)	(0.001; 0.003)	(0.001; 0.003)
Same Judicial Selection Method	0.251	-0.181	-0.171	**0.028***
	(-0.115; 0.587)	(-0.488; 0.107)	(-0.436; 0.076)	(-0.106; 0.139)
Contiguous Neighbors	-0.243	0.007	0.118	-0.096
	(-0.753; 0.127)	(-0.254; 0.243)	(-0.122; 0.335)	(-0.256; 0.034)
Same Federal Circuit	-0.095	-0.063	-0.051	-0.068
	(-0.525; 0.237)	(-0.335; 0.177)	(-0.387; 0.208)	(-0.219; 0.073)
Model				
No. Cases Published	0.004	**0.013***	**0.019***	**0.007***
	(-0.003; 0.009)	(0.004; 0.021)	(0.012; 0.028)	(0.005; 0.009)

A * and **bold font** indicates that variable is statistically significant at or beyond the 0.05 level. Confidence intervals are based on 1,000 bootstrap iterations.

my hypothesis that the state supreme courts cite courts who look like them. For the variables that calculate the absolute difference between the two courts or states in the dyad (ideology and the demographic covariates), a small, negative, and statistically significant effect provides evidence of homophily. The other similarity variables are indicator variables, and a positive statistically significant coefficient indicates a citation is more likely result from two courts or states who share the specified feature. Moreover, the signs of both Population Difference and Gross State Product Difference are in the opposite direction of the TERGM results.

The large number of significant network effects can explain some of the problems in the logit model. Since the dyadic logit model imposes a strict independence assumption—which the network effects violate—the logit model is unable to account for these. This results in variables that should be modeled but are not. This problem is known as omitted variable bias. As the large number of significant covariates in Table 6.3 illustrate, failing to include the network effects in the models results in many of the covariates over or underestimating the similarity effects.

6.5   Conclusion

In this chapter, I have sought to explain why state supreme courts cite precedent of other state supreme courts. There are three main items to take away from this analysis. First, area of law matters. Network and diffusion variables affect the likelihood of citation differently. This is important because a naive approach that pools multiple areas of law into a single model provide misleading inferences.

Second, a significant conclusion of this chapter is that courts do not cite courts who look like them. Even though my hypotheses, rooted in policy diffusion literature, expected shared features would positively predict citations, the results do not support the literature. State supreme courts do not learn from their contiguous or regional neighbors. The results show that when state supreme courts look for guidance, similarity is not an important feature driving the citations.

Instead of traditional diffusion variables, network effects are consistently sig-

nificant across all models. State supreme courts do not reciprocate citations and popularity is not present. But transitivity is positive in judicial conduct and the combined laws models, this means that the courts are connected by a friend of a friend. Time is an important feature, what a court did in the previous year is a good predictor for what it will do in the current year. Although reciprocity and popularity are not present in the network, it is just as important that we include them so that we can glean their substantive impact (Cranmer, Desmarais and Menninga 2012).

The strong network effects indicate that we can use the courts or dyads themselves to explain the other citations among and between the state supreme courts. Just as Cranmer and Desmarais (2016) warn IR scholars, the state supreme court social system is not a truly dyadic design; dyadic theory and traditional dyadic analyses are inadequate. As I have demonstrated in this chapter, using traditional regression methods produces misspecified models and any inferences made from these models are highly suspect. These models may lead to faulty inferences and omitting network variables biases the results. Finally, state supreme courts operate in a social system. The state supreme court system is complex and the models and theories we use should incorporate those features.

CHAPTER 7
CONCLUSION

Tammy Watts worked as a nurse in a Wyoming minimum-security state correctional facility. On the morning of April 15, 2004, Tammy was in the medical offices located in the basement of the building. Sometime before 7:00 a.m., Floyd Grady, an inmate at the facility, entered the offices, approached Tammy, and strangled and bludgeoned her to death. During his criminal trial, Grady was found guilty of first-degree murder. In a separate civil lawsuit, Tammy's husband brought a wrongful death claim against the state for failing to operate the facility in a safe and secure manner, failing to prevent Grady from killing Tammy, as well as several other claims.[1] After Tammy's husband won his case in the lower courts, the case eventually reached the Wyoming Supreme Court. Despite the devastating facts of the criminal case, the civil case presented a dry and nuanced interpretation of a state statute. The court focused on the state's assertion that the state was immune from liability; the question before the court was, under what circumstances is the government protected by immunity for its operation of a building. Mr. Watts argued that the state waived immunity in its negligent operation of the building and was liable for his wife's death, while the state disagreed are argued that it was protected by immunity.

The first important decision the Wyoming Supreme Court reached was delineating the meaning of "operation," which, unfortunately, was not defined in the

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[1] *State Dept. of Corrections* v. *Watts*, 177 P.3d 793 (Wyo. 2008).

statute. The court laboriously defined operation, consulting not one, but three separate dictionaries, including a legal dictionary. Guided by the ordinary (and obvious) definition of the term, the court turned next to addressing the substance of the parties' claim, whether operation of the building applies to the institution or whether the statute should be construed narrowly to the physical building. To address these questions, the court turned to several New Mexico Supreme Court cases, in part because Wyoming and New Mexico have similar statutes regulating when immunity applies, and because the attorneys for both parties directed the court to several New Mexico cases. Despite discussing ten of New Mexico's opinions, the court found New Mexico's rationale insufficient to interpret operation of building to include activities unrelated to the physical building. Instead, because Maine's statute is also similar to Wyoming's, the court turned to Maine's cases to learn how Maine interpreted public buildings and its exceptions to immunity.[2] The Wyoming Supreme Court concluded that in order for an immunity exception to apply, the nuisance must directly pertain to the physical building. Since most of Mr. Watts's claims did not relate to the operation of the physical condition of the building, the court concluded the state was immune and not liable for Tammy's death.

Together with Patience Paye's case discussed at the beginning of Chapter 1, and the numerous examples provided throughout this dissertation, these cases demonstrate that state supreme courts rely on other state supreme courts for help

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[2]The Wyoming Supreme Court stated: "This Court is more inclined to agree with Maine's interpretation of its public buildings exception, also similar to § 1-39-106." *Watts*, 177 P.3d at 802.

in tackling difficult legal issues. As demonstrated here, all state supreme courts cite one another in their legal opinions. This project is dedicated to discovering *why* state supreme courts cite other state supreme courts.

7.1   Summary of Findings

State supreme courts are autonomous institutions with significant power. Yet, despite this authority, state supreme courts routinely rely on one another to explain why and how they reached their decisions. This puzzle of why state supreme courts cite each other led me to pose two questions. First, under what conditions do state supreme courts cite other states supreme courts? And second, to whom do they turn for guidance? To answer these questions, I propose a new theory for evaluating state supreme court citations, the social learning model. I argue that courts are social actors who interact, influence, and learn from one another, and the citations are communications by and between the courts. I borrow policy diffusion's learning mechanism and I pair it with network theory to offer an explanation for peer-to-peer state supreme court citations practices. The social network theory of precedent emphasizes the social interaction, the citations, as the key to revealing the influences on the development of precedent.

I hope to have made two contributions in this dissertation. First, I bring the extensive policy diffusion literature to a new problem, the development of case law, and I argue that state supreme courts are learning from each other. Second, I address my research questions with new methods and new data. I create an original dataset

containing all judicial conduct, family law, and First Amendment opinions published by every state supreme court and the citations contained within those decisions. I treat a court's citation of another court as a relationship; courts can have multiple relationships and can interact and influence each other. Since these citations are relational, I account for this interdependence between the courts methodologically and theoretically. I apply network analysis to represent how the citations in the network depend upon each other. Chapters 5 and 6 empirically test my research questions.

In Chapter 5, I examined to whom the courts turned for guidance. The number of citations increased over time. In the 1960s, at the beginning of the analysis, there were almost no citations between the states. However, post-1970, citations began to increase. This suggests that courts have become more connected over time. Most importantly, no single state supreme court leader emerges, rather there are different leaders for each area of law, and those leaders change over time.

In Chapter 6, I analyzed the conditions for state-to-state citation. To do so, I presented three broad hypotheses. First, I predicted that state supreme courts would cite other state supreme courts who shared similar political, demographic, geographic, and institutional features. In other words, I expected homophily across a range of factors. Second, I hypothesized that a series of endogenous relationships, captured by the network variables, explained the citations. Finally, I predicted that there was a temporal aspect to citation patterns.

There are several surprising results. Although I drew on the policy diffusion literature to formulate my hypotheses, my results were not as I expected. I find that

state supreme courts do not cite state supreme courts who look like them. And while I predicted that courts would reciprocate citations or that there would be a popularity effect, neither of those relationships exist in any of the networks. I did, however, find that a series of citations connect three courts via transitivity.

This project also makes several other contributions to the study of courts. First, the area of law matters. As highlighted in Chapters 5 and 6, there are vast differences by legal issue. This effect is magnified when I pool the legal issues into a single model. The combined legal issue model produces results distinct from results found when I isolate the area of law. Such drastic outcomes indicate that conditions for citation are not uniform across the legal issue areas.

A second important contribution is the role that time plays in the analysis. Citations are not constant throughout the fifty year period. The number of citations increases over time, but does so irregularly and seems to become somewhat stationary in the final years of the data. The logit model excluding time most significantly establishes this.

Finally, and most importantly, courts are connected. Citations are endogenous; what one court does affects other courts. Yet, most judicial politics scholarship assumes that the courts act independently. The network approach to citations specifically tests these endogenous relationships, it also directly models the complex dependencies of citation networks. As detailed in Chapter 6, applying a traditional regression framework to model this type of data reveals faulty significant diffusion variables—even when including temporal aspect—while the network models wipe all

the statistical significance from the diffusion variables. As others have likewise found (see Cranmer, Desmarais and Menninga 2012), the logit models' effects are incorrect.

7.2 Remaining Questions and Next Steps

These conclusions leave me with more questions than when I began. I intend to pursue these lingering issues as I develop this project into a book and other future work. There are three primary avenues for expansion to explore the diffusion of precedent across multiple actors.

First, state supreme courts do not rely exclusively on other state supreme courts. They regularly cite other state's intermediate appellate courts, as well as federal appellate courts, and the U.S. Supreme Court. While this project examines the evolution of precedent from state supreme court to state supreme court, state supreme courts are only small subset of the federal judicial system. The federal system allows each state to adapt its caselaw and rulings to local preferences and conditions. By dividing judicial authority among fifty-two state supreme courts, federalism provides for policy experimentation of the sort cheered as the laboratories of democracy (see, e.g. Volden 2006). Situating the courts in the complex federal judiciary will paint a much more complete picture of citation practices. I hope to gain insight into how the courts view themselves within the hierarchy and whether more regional patterns will be revealed.

Additionally, although this project's unit of analysis is the states, the cases that make up the citations are also fertile ground for exploration. While I read through

several state supreme courts' opinions, I noted that a few cases were repeatedly cited. This leads me to several questions. Are there certain cases that courts always cite? Does state supreme court opinions' precedential power wane over time? Do "important" cases constrain justices and prevent them adopting their preferred legal rule (see Fowler and Jeon 2008). Analyzing the cases themselves will allow me to model the evolution or dynamics of legal change across the states so that I can answer these important questions.

Finally, courts don't make decisions, justices do. This is perhaps my current analysis's greatest weakness. Modeling the citations between the courts sheds important light on citation patterns, but citations are not the product of the court, they are the result of individuals making decisions. Modifying the unit of analysis to the justice and applying network theory will highlight many important relationships between justices. Do justices cite their friends? Do justices' citations differ from one another? These and many more questions can be answered.

Relatedly, many times the out-of-state citations come not from the courts, but from the attorneys. Arguing on behalf of their clients, attorneys draw the courts' attention to cases from outside the court's jurisdiction. An example of this was noted in the Tammy Watts's civil case at the beginning of the chapter. Through the use of computational text analysis, I can determine the amount of text borrowed from attorneys' briefs that make it into the court's published decision. An exploration of the citations' origin can shed further light on the diffusion of precedent.

More immediately, I also plan to expand the number of citations. In the time

since I began this project, a non-profit group, Free Law Project, released a data set of court citations (Free Law Project N.d.). The data contains millions of federal and state court opinions and the citations contained within those opinions. The group culled the opinions' citations in the exact same manner in which I constructed my data, by searching the text of the judicial opinions for standard case law citation formats. Although the data offer an abundance of citations, it does not currently define the opinion's area of law, which my analysis reveals is an important distinction. Expanding to include the universe of citations will be an important advancement. Together, these next steps will offer a more complete analysis of state courts.

7.3   Connected Courts

Although it is impossible to definitively conclude that a single diffusion mechanism occurs, this project presents ample evidence to suggest that the courts are learning from each other. First, the courts' written language discloses the mechanism. Courts state that their own case law does not provide a solution to the question presented and they must seek answers elsewhere. Second, the diffusion patterns tell a learning story. As was depicted in the network graphs of Figure **??**, the courts do not always cite the same state, as we would expect from emulation. Finally, certain states courts do not accumulate more citations than others, as identified by the statistically significant network popularity variable. Together with the centrality measures in Chapter 5, this suggests that one court is not consistently cited more than others.

In this dissertation, I presented a more nuanced account of the process by

which courts interact, the factors that lead to the interaction, and the change in the laws it produces. Although state supreme courts sit atop the judicial hierarchy in their states, and while they are autonomous and independent institutions, the courts do not work alone. State supreme courts depend on each other to make their decisions. State supreme courts rely on other courts to learn how they solved same or similar problems. The courts use other courts' decisions to provide a solution. By relying on and citing one another's decisions, the courts share power. This is important because a state supreme court's decision can affect the outcome of a case in another state. Tammy's wrongful death case at the beginning of this chapter cited multiple opinions from at least two states, Wyoming and Maine. Patience Paye's case in Chapter 1 cited at least nine other state's opinions. Both cases significantly relied on other state supreme courts to reach their conclusions. Tammy and Patience's cases demonstrate state supreme courts are connected.

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APPENDICES A
CHAPTER 5 APPENDIX

Table A.1: Authority Scores for Each State, 1960–2010

State	Family Law	First Amendment	Judicial Conduct	Combined Laws
Alabama	0.00	0.00	0.46	0.00
Alaska	0.64	0.63	0.30	0.63
Arizona	0.11	0.28	0.43	0.28
Arkansas	0.17	0.23	0.05	0.23
California	0.02	1.00	0.21	1.00
Colorado	0.29	0.59	0.46	0.59
Connecticuit	0.19	0.31	0.42	0.31
Delaware	0.38	0.47	0.25	0.47
Florida	0.24	0.79	1.00	0.79
Georgia	0.22	0.38	0.31	0.38
Hawaii	0.00	0.03	0.11	0.03
Idaho	0.03	0.03	0.07	0.03
Illinois	0.00	0.13	0.30	0.13
Indiana	0.09	0.13	0.60	0.13
Iowa	0.31	0.49	0.48	0.49
Kansas	0.17	0.33	0.39	0.33
Kentucky	0.10	0.35	0.45	0.35
Louisiana	0.23	0.47	0.61	0.47
Maine	1.00	0.23	0.55	0.23
Maryland	0.06	0.16	0.28	0.16
Massachusetts	0.03	0.83	0.55	0.83
Michigan	0.07	0.21	0.36	0.21
Minnesota	0.81	0.65	0.65	0.65
Mississippi	0.58	0.19	0.51	0.19
Missouri	0.26	0.26	0.62	0.26
Montana	0.22	0.19	0.10	0.19
Nebraska	0.26	0.05	0.53	0.05
Nevada	0.07	0.06	0.22	0.06
New Hampshire	0.00	0.11	0.22	0.11
New Jersey	0.17	0.84	0.58	0.84
New Mexico	0.01	0.04	0.20	0.04
New York	0.26	0.47	0.56	0.47
North Carolina	0.08	0.19	0.37	0.19
North Dakota	0.73	0.24	0.46	0.24
Ohio	0.06	0.31	0.22	0.31
Oklahoma	0.23	0.35	0.29	0.35
Oregon	0.00	0.53	0.33	0.53
Pennsylvania	0.05	0.70	0.60	0.70
Rhode Island	0.43	0.38	0.23	0.38
South Carolina	0.17	0.09	0.24	0.09
South Dakota	0.47	0.17	0.10	0.17
Tennessee	0.13	0.67	0.08	0.67
Texas	0.13	0.27	0.23	0.27
Utah	0.23	0.13	0.32	0.13
Vermont	0.21	0.09	0.15	0.09
Virginia	0.12	0.30	0.10	0.30
Washington	0.08	0.84	0.53	0.84
West Virginia	0.04	0.26	0.38	0.26
Wisconsin	0.13	0.16	0.34	0.16
Wyoming	0.09	0.38	0.15	0.38
Average	0.21	0.34	0.36	0.34
Std Dev	0.22	0.25	0.19	0.25

Table A.2: In Degree Centrality Measures for Each State, 1960–2010

State	Family Law	First Amendment	Judicial Conduct	Combined Laws
Alabama	0.00	0.00	0.00	0.00
Alaska	0.55	0.71	0.71	0.71
Arizona	0.04	0.31	0.31	0.31
Arkansas	0.13	0.19	0.19	0.19
California	0.11	0.83	0.83	0.83
Colorado	0.34	0.81	0.81	0.81
Connecticuit	0.13	0.21	0.21	0.21
Delaware	0.26	0.48	0.48	0.48
Florida	0.34	1.17	1.17	1.17
Georgia	0.11	0.31	0.31	0.31
Hawaii	0.00	0.08	0.08	0.08
Idaho	0.09	0.06	0.06	0.06
Illinois	0.04	0.25	0.25	0.25
Indiana	0.13	0.19	0.19	0.19
Iowa	0.38	0.77	0.77	0.77
Kansas	0.09	0.21	0.21	0.21
Kentucky	0.23	0.56	0.56	0.56
Louisiana	0.15	0.60	0.60	0.60
Maine	0.64	0.33	0.33	0.33
Maryland	0.04	0.21	0.21	0.21
Massachusetts	0.11	0.88	0.88	0.88
Michigan	0.09	0.17	0.17	0.17
Minnesota	0.45	0.77	0.77	0.77
Mississippi	0.38	0.19	0.19	0.19
Missouri	0.26	0.46	0.46	0.46
Montana	0.26	0.17	0.17	0.17
Nebraska	0.28	0.15	0.15	0.15
Nevada	0.13	0.17	0.17	0.17
New Hampshire	0.02	0.23	0.23	0.23
New Jersey	0.19	0.52	0.52	0.52
New Mexico	0.06	0.06	0.06	0.06
New York	0.13	0.52	0.52	0.52
North Carolina	0.09	0.15	0.15	0.15
North Dakota	0.66	0.38	0.38	0.38
Ohio	0.06	0.31	0.31	0.31
Oklahoma	0.15	0.29	0.29	0.29
Oregon	0.00	0.42	0.42	0.42
Pennsylvania	0.06	0.56	0.56	0.56
Rhode Island	0.23	0.40	0.40	0.40
South Carolina	0.11	0.13	0.13	0.13
South Dakota	0.43	0.25	0.25	0.25
Tennessee	0.19	0.67	0.67	0.67
Texas	0.19	0.40	0.40	0.40
Utah	0.19	0.27	0.27	0.27
Vermont	0.09	0.13	0.13	0.13
Virginia	0.09	0.17	0.17	0.17
Washington	0.13	0.69	0.69	0.69
West Virginia	0.13	0.19	0.19	0.19
Wisconsin	0.17	0.27	0.27	0.27
Wyoming	0.17	0.31	0.31	0.31
Average	0.19	0.37	0.37	0.37
Std Dev	0.16	0.26	0.26	0.26

Table A.3: Hub Scores for Each State, 1960–2010

State	Family Law	First Amendment	Judicial Conduct	Combined Laws
Alabama	0.00	0.00	0.00	0.00
Alaska	0.05	0.16	0.40	0.40
Arizona	0.01	0.02	0.04	0.04
Arkansas	0.02	0.01	0.04	0.04
California	0.06	0.18	0.48	0.48
Colorado	0.00	0.41	0.96	0.96
Connecticuit	0.13	0.29	0.79	0.79
Delaware	0.00	0.02	0.04	0.04
Florida	0.01	0.08	0.31	0.31
Georgia	0.01	0.05	0.13	0.13
Hawaii	0.00	0.29	0.63	0.63
Idaho	0.00	0.01	0.04	0.04
Illinois	0.05	0.08	0.13	0.13
Indiana	0.01	0.07	0.15	0.15
Iowa	0.02	0.17	0.38	0.38
Kansas	0.01	0.18	0.44	0.44
Kentucky	0.00	0.09	0.21	0.21
Louisiana	0.05	0.15	0.40	0.40
Maine	0.00	0.18	0.38	0.38
Maryland	0.21	0.33	0.75	0.75
Massachusetts	0.01	0.14	0.33	0.33
Michigan	0.00	0.10	0.31	0.31
Minnesota	0.01	0.13	0.40	0.40
Mississippi	0.00	0.16	0.44	0.44
Missouri	0.00	0.28	0.96	0.96
Montana	0.00	0.15	0.33	0.33
Nebraska	0.03	0.10	0.27	0.27
Nevada	0.09	0.26	0.56	0.56
New Hampshire	0.03	0.07	0.27	0.27
New Jersey	0.00	0.03	0.08	0.08
New Mexico	0.00	0.03	0.17	0.17
New York	0.00	0.00	0.00	0.00
North Carolina	0.07	0.02	0.04	0.04
North Dakota	0.01	0.09	0.40	0.40
Ohio	0.03	0.03	0.08	0.08
Oklahoma	0.00	0.06	0.19	0.19
Oregon	0.00	0.00	0.00	0.00
Pennsylvania	0.02	0.12	0.48	0.48
Rhode Island	0.00	0.01	0.06	0.06
South Carolina	0.00	0.01	0.06	0.06
South Dakota	0.02	0.05	0.13	0.13
Tennessee	0.00	0.03	0.08	0.08
Texas	0.00	1.00	2.25	2.25
Utah	0.00	0.45	1.04	1.04
Vermont	0.08	0.26	0.73	0.73
Virginia	0.00	0.00	0.00	0.00
Washington	0.01	0.12	0.35	0.35
West Virginia	1.00	0.34	1.00	1.00
Wisconsin	0.01	0.36	0.77	0.77
Wyoming	0.01	0.03	0.06	0.06
Average	0.04	0.14	0.37	0.37
Std Dev	0.14	0.17	0.40	0.40

Table A.4: Out Degree Centrality Measures for Each State, 1960–2010

State	Family Law	First Amendment	Judicial Conduct	Combined Laws
Alabama	0.00	0.00	0.00	0.00
Alaska	0.32	0.40	0.40	0.40
Arizona	0.04	0.04	0.04	0.04
Arkansas	0.09	0.04	0.04	0.04
California	0.23	0.48	0.48	0.48
Colorado	0.00	0.96	0.96	0.96
Connecticuit	0.57	0.79	0.79	0.79
Delaware	0.00	0.04	0.04	0.04
Florida	0.13	0.31	0.31	0.31
Georgia	0.04	0.13	0.13	0.13
Hawaii	0.00	0.63	0.63	0.63
Idaho	0.00	0.04	0.04	0.04
Illinois	0.13	0.13	0.13	0.13
Indiana	0.06	0.15	0.15	0.15
Iowa	0.04	0.38	0.38	0.38
Kansas	0.06	0.44	0.44	0.44
Kentucky	0.00	0.21	0.21	0.21
Louisiana	0.23	0.40	0.40	0.40
Maine	0.04	0.38	0.38	0.38
Maryland	1.17	0.75	0.75	0.75
Massachusetts	0.02	0.33	0.33	0.33
Michigan	0.00	0.31	0.31	0.31
Minnesota	0.06	0.40	0.40	0.40
Mississippi	0.04	0.44	0.44	0.44
Missouri	0.00	0.96	0.96	0.96
Montana	0.02	0.33	0.33	0.33
Nebraska	0.13	0.27	0.27	0.27
Nevada	0.85	0.56	0.56	0.56
New Hampshire	0.26	0.27	0.27	0.27
New Jersey	0.00	0.08	0.08	0.08
New Mexico	0.00	0.17	0.17	0.17
New York	0.00	0.00	0.00	0.00
North Carolina	0.28	0.04	0.04	0.04
North Dakota	0.04	0.40	0.40	0.40
Ohio	0.04	0.08	0.08	0.08
Oklahoma	0.00	0.19	0.19	0.19
Oregon	0.02	0.00	0.00	0.00
Pennsylvania	0.11	0.48	0.48	0.48
Rhode Island	0.00	0.06	0.06	0.06
South Carolina	0.00	0.06	0.06	0.06
South Dakota	0.04	0.13	0.13	0.13
Tennessee	0.00	0.08	0.08	0.08
Texas	0.00	2.25	2.25	2.25
Utah	0.00	1.04	1.04	1.04
Vermont	0.32	0.73	0.73	0.73
Virginia	0.00	0.00	0.00	0.00
Washington	0.06	0.35	0.35	0.35
West Virginia	3.70	1.00	1.00	1.00
Wisconsin	0.04	0.77	0.77	0.77
Wyoming	0.04	0.06	0.06	0.06
Average	0.19	0.37	0.37	0.37
Std Dev	0.55	0.40	0.40	0.40

Table A.5: Betweenness Centrality Measures for Each State, 1960–2010

State	Family Law	First Amendment	Judicial Conduct	Combined Laws
Alabama	0.00	0.00	0.00	0.00
Alaska	0.18	0.07	0.07	0.07
Arizona	0.00	0.00	0.00	0.00
Arkansas	0.11	0.00	0.00	0.00
California	0.03	0.03	0.03	0.03
Colorado	0.00	0.11	0.11	0.11
Connecticuit	0.00	0.01	0.01	0.01
Delaware	0.00	0.00	0.00	0.00
Florida	0.06	0.05	0.05	0.05
Georgia	0.00	0.00	0.00	0.00
Hawaii	0.00	0.02	0.02	0.02
Idaho	0.00	0.00	0.00	0.00
Illinois	0.01	0.00	0.00	0.00
Indiana	0.01	0.00	0.00	0.00
Iowa	0.08	0.05	0.05	0.05
Kansas	0.00	0.00	0.00	0.00
Kentucky	0.00	0.02	0.02	0.02
Louisiana	0.08	0.05	0.05	0.05
Maine	0.12	0.01	0.01	0.01
Maryland	0.02	0.02	0.02	0.02
Massachusetts	0.03	0.03	0.03	0.03
Michigan	0.00	0.01	0.01	0.01
Minnesota	0.01	0.03	0.03	0.03
Mississippi	0.04	0.01	0.01	0.01
Missouri	0.00	0.07	0.07	0.07
Montana	0.07	0.00	0.00	0.00
Nebraska	0.12	0.01	0.01	0.01
Nevada	0.26	0.03	0.03	0.03
New Hampshire	0.00	0.03	0.03	0.03
New Jersey	0.00	0.00	0.00	0.00
New Mexico	0.00	0.01	0.01	0.01
New York	0.00	0.00	0.00	0.00
North Carolina	0.00	0.00	0.00	0.00
North Dakota	0.06	0.02	0.02	0.02
Ohio	0.00	0.00	0.00	0.00
Oklahoma	0.00	0.00	0.00	0.00
Oregon	0.00	0.00	0.00	0.00
Pennsylvania	0.11	0.03	0.03	0.03
Rhode Island	0.00	0.00	0.00	0.00
South Carolina	0.00	0.01	0.01	0.01
South Dakota	0.01	0.00	0.00	0.00
Tennessee	0.00	0.01	0.01	0.01
Texas	0.00	0.07	0.07	0.07
Utah	0.00	0.04	0.04	0.04
Vermont	0.00	0.01	0.01	0.01
Virginia	0.00	0.00	0.00	0.00
Washington	0.10	0.03	0.03	0.03
West Virginia	0.11	0.01	0.01	0.01
Wisconsin	0.01	0.02	0.02	0.02
Wyoming	0.02	0.00	0.00	0.00
Average	0.03	0.02	0.02	0.02
Std Dev	0.06	0.02	0.02	0.02

APPENDICES B
CHAPTER 6 APPENDIX

Table B.1: Kitchen Sink Model

	Family Law	First Amendment	Judicial Conduct	Combined Laws
Edges	**−5.329***	**−3.548***	**−5.127***	**−5.308***
	(−8.468; −2.969)	(−4.559; −2.514)	(−6.343; −3.875)	(−6.227; −4.534)
Temporal				
Lagged Citation	**2.487***	**−0.962***	**0.936***	0.181
	(1.649; 3.012)	(−13.927; −0.117)	(0.489; 1.283)	(−0.298; 0.520)
Linear Time Trend	0.024	0.011	**0.050***	**0.023***
	(−0.014; 0.075)	(−0.012; 0.037)	(0.025; 0.082)	(0.005; 0.048)
Network				
Reciprocity	**−1.605***	**−1.723***	**−0.896***	**−0.760***
	(−15.202; −0.716)	(−14.893; −0.845)	(−2.572; −0.161)	(−1.531; −0.172)
Delayed Reciprocity	**−12.726***	−0.491	−0.256	0.050
	(−26.112; −16.498)	(−12.562; 0.486)	(−1.991; 0.463)	(−0.236; 0.279)
Transitivity	−0.722	0.212	**0.597***	**0.627***
	(−1.711; 0.044)	(−0.661; 0.715)	(0.226; 0.829)	(0.529; 0.711)
Popularity	**−1.106***	**−0.382***	**−0.425***	**−0.414***
	(−1.911; −0.489)	(−0.662; −0.189)	(−0.759; −0.236)	(−0.509; −0.336)
Isolates	**2.085***	**1.530***	**1.529***	**0.965***
	(1.791; 2.386)	(1.334; 1.782)	(1.316; 1.800)	(0.808; 1.120)
Similarity				
Court Ideology Difference	−0.020	0.063	0.005	−0.013
	(−0.241; 0.180)	(−0.056; 0.185)	(−0.155; 0.186)	(−0.100; 0.072)
Citizen Ideology Difference	0.005	−0.004	0.005	−0.002
	(−0.008; 0.016)	(−0.012; 0.003)	(−0.002; 0.013)	(−0.005; 0.001)
Population Difference	0.031	0.003	0.032	−0.007
	(−0.073; 0.140)	(−0.064; 0.062)	(−0.025; 0.077)	(−0.052; 0.047)
Real Personal Income Difference	−0.002	0.021	−0.019	−0.000
	(−0.071; 0.049)	(−0.017; 0.052)	(−0.049; 0.001)	(−0.000; 0.000)
Gross State Product Difference	−0.000	0.000	−0.001	0.001
	(−0.002; 0.003)	(−0.001; 0.002)	(−0.002; 0.001)	(−0.001; 0.002)
Innovativeness Difference	0.358	0.625	−0.248	0.313
	(−1.152; 1.758)	(−0.743; 2.089)	(−1.194; 0.588)	(−0.212; 0.848)
Professionalism Difference	0.922	**−0.997***	−0.242	−0.480
	(−0.347; 2.147)	(−2.001; −0.132)	(−0.986; 0.562)	(−1.022; 0.010)
Reputation Difference	**−0.004***	−0.001	0.000	−0.000
	(−0.007; −0.001)	(−0.003; 0.001)	(−0.002; 0.002)	(−0.001; 0.001)
Same Judicial Selection Method	0.090	0.067	**−0.268***	−0.067
	(−0.210; 0.349)	(−0.091; 0.214)	(−0.510; −0.066)	(−0.159; 0.018)
Contiguous Neighbors	−0.247	−0.009	0.165	0.084
	(−0.822; 0.167)	(−0.335; 0.259)	(−0.084; 0.401)	(−0.034; 0.189)
Same Federal Circuit	0.013	−0.132	−0.156	0.045
	(−0.471; 0.335)	(−0.471; 0.173)	(−0.501; 0.114)	(−0.101; 0.191)
Same West Legal Reporter	0.096	−0.105	0.194	−0.008
	(−0.277; 0.395)	(−0.294; 0.053)	(−0.019; 0.391)	(−0.154; 0.131)
Model (cited) Court				
Cases Published	0.001	**0.011***	**−0.013***	**−0.002***
	(−0.010; 0.008)	(0.002; 0.019)	(−0.021; −0.006)	(−0.005; −0.001)
Population	0.056	0.022	0.006	0.033
	(−0.016; 0.121)	(−0.031; 0.078)	(−0.028; 0.041)	(−0.008; 0.068)
Gross State Product	−0.001	−0.000	0.000	**−0.001***
	(−0.004; 0.001)	(−0.002; 0.001)	(−0.001; 0.001)	(−0.002; −0.000)
Real Personal Income	0.031	−0.028	0.013	0.000
	(−0.011; 0.077)	(−0.058; 0.006)	(−0.023; 0.045)	(−0.000; 0.000)
Learning (citing) Court				
Population	0.030	−0.045	0.053	0.016
	(−0.118; 0.181)	(−0.117; 0.020)	(−0.031; 0.125)	(−0.052; 0.089)
Real Personal Income	0.009	0.017	−0.013	**0.000***
	(−0.093; 0.100)	(−0.029; 0.061)	(−0.065; 0.045)	(0.000; 0.000)
nodeocov.Gross State Product	−0.000	0.001	−0.001	−0.001
	(−0.004; 0.003)	(−0.001; 0.002)	(−0.003; 0.001)	(−0.003; 0.001)

The number represents the coefficient estimate. The item in parentheses are 2.5% and 97.5% confidence intervals.
A * and **bold font** indicates that variable is statistically significant at or beyond the 0.05 level.
Confidence intervals are based on 1,000 bootstrap iterations.

Figure B.1: Map of West's Reporter Regions