

ESSAY

THE REAGAN REVOLUTION IN THE NETWORK OF LAW

Frank B. Cross^{*}

Thomas A. Smith^{**}

Antonio Tomarchio^{***}

ABSTRACT

This Essay analyzes the effect of the Rehnquist Court on Supreme Court precedent, using a network of all Court citations to other Supreme Court cases. Network analysis enables a study of the Court's use of precedent that may not be readily visible from case-by-case reviews. We find that the Rehnquist Court has made a dramatic alteration in the network of precedent and, in the process, set the stage for a potentially revolutionary change in the makeup of the law. This may be very much the effect contemplated by the Reagan Administration in its effort to remake the composition of the Court.

^{*} Herbert D. Kelleher Centennial Professor of Business Law, University of Texas Law School.

^{**} Professor of Law, University of San Diego School of Law.

^{***} Polytechnic of Milan.

INTRODUCTION

The Reagan Administration embarked on a project to transform the federal judiciary.¹ There was at the time a conservative backlash against perceived excesses of the Warren Court, and the Burger Court was viewed as being complicitous in the liberal activism of its predecessor.² Consequently, the Administration sought to remake the Supreme Court by appointing conservative justices.³ The Administration had four appointments to the Court through which to accomplish its objective.

The dispute over the effect of the new, more conservative justices chosen for the Court has generally been anecdotal. People have pointed to particular decisions to support their claims about the effect of the Rehnquist Court as promoting conservative judicial activism or betraying conservative principles. This is akin to looking at individual trees, though, which does not necessarily provide an accurate view of the full forest of the Court's decisions. Network analysis allows an evaluation of the full forest of judicial decisionmaking.⁴ The data in this Article include all citations to precedent found in Supreme Court opinions over the Rehnquist years.

This Article uses data providing a network of all U.S. Supreme Court decisions and their citations to other decisions. The data enable us to examine the effect of Reagan's efforts to remake the judiciary on the network of precedents used by the Supreme Court. After examining the more anecdotal reports of the Reagan Revolution and its purported success or failure, we turn to network measures to analyze its effect. Using several accepted measures of network characteristics, we test the effect of Reagan's efforts, using the

¹ See CHRISTOPHER S. KELLEY, EXECUTING THE CONSTITUTION: PUTTING THE PRESIDENT BACK INTO THE CONSTITUTION 163 (2006) ("Reagan saw a transformation of the judiciary as key to his political agenda and . . . policy considerations drove his judicial appointments.").

² See Keith E. Whittington, *William H. Rehnquist: Nixon's Strict Constructionist, Reagan's Chief Justice*, in REHNQUIST JUSTICE: UNDERSTANDING THE COURT DYNAMIC 8, 13 (Earl M. Maltz ed., 2003) ("[The] Reagan Justice Department became a magnet for a new generation of legal conservatives, many of whom were at least as critical of the Burger Court as of the Warren Court."); J. Harvie Wilkinson III, *Is There a Distinctive Conservative Jurisprudence?*, 73 U. COLO. L. REV. 1383, 1383 (2002) ("Many of us came of age concerned about the excessive activism of the Warren and Burger Courts.").

³ See KELLEY, *supra* note 1, at 163.

⁴ See James H. Fowler et al., *Network Analysis and the Law: Measuring the Legal Importance of Supreme Court Precedents 2* (unpublished manuscript, on file with authors), available at <http://ssrn.com/abstract=906827> ("At its core, network analysis maps and measures relationships between, for example, people, groups, computers, or information.").

Rehnquist Court as our proxy for these efforts. These show a distinct effect of the Court on the nature of the legal network of precedents.

I. THE REAGAN REVOLUTION

This Part reviews the literature on the efforts of the Reagan Administration to remake the courts. The Administration came into office committed to remake the judiciary and altered its selection methods. Reagan got four Supreme Court appointments with which to effect this change, and we review the evidence on the Administration's practice and its effects in this Part.

A. *The Plan and Its Execution*

The makeup of the federal judiciary was a significant issue in the 1980 presidential election. Ronald Reagan argued that the judiciary had lost its grounding in originalism and restraint and made political decisions suited for the legislature. The liberal decisions of the Warren Court and subsequent decisions, such as *Roe v. Wade*,⁵ were a focus of the criticism. The Republican Party platform emphasized a commitment to appoint judges who respected "traditional family values."⁶ After assuming office, the Reagan Administration altered the structure of judicial appointments. It centralized the process, creating a greater role for the White House in appointments and, accordingly, reducing the role of Senators.⁷ Appointments were no longer given out primarily for patronage purposes, but ideology became a key determinant in the process.⁸

Reagan advisers William French Smith and Edwin Meese carried out the judicial appointment strategy of the administration. In a famous early speech, Smith criticized the courts for engaging in subjective policymaking in decisions like *Roe*, for being overly aggressive in antidiscrimination law and approving affirmative action, and in imposing equitable remedies beyond the

⁵ 410 U.S. 113 (1973).

⁶ Republican Nat'l Comm., *1980 Republican Platform Text*, CONG. Q. WKLY. REP., July 19, 1980, at 2046.

⁷ See STEPHEN L. WASBY, *THE SUPREME COURT IN THE FEDERAL JUDICIAL SYSTEM* 103 (4th ed. 1993) (describing this change); SHELDON GOLDMAN, *PICKING FEDERAL JUDGES: LOWER COURT SELECTION FROM ROOSEVELT THROUGH REAGAN* 292 (1997) (reporting that under Reagan, the "highest levels of the White House staff thus played an ongoing, active role in the selection of judges").

⁸ See WASBY, *supra* note 7, at 103-04 (noting that the administration "refused to fill positions until Senators submitted names of people whose ideology fit the administration's wishes").

scope of judicial decision making.⁹ The Administration aggressively sought out individuals who agreed with its philosophy for appointment to the federal bench. It “did not proceed with a judicial nomination . . . unless it felt assured that the nominee shared the administration’s judicial philosophy.”¹⁰

Although the Reagan Administration put great care into circuit court appointments, it was the Supreme Court that commanded the most attention. The first appointee to that Court, Sandra Day O’Connor, fulfilled a campaign pledge to appoint a woman¹¹ but did not appear to be a revolutionary one. She was viewed as a moderate conservative and has generally been seen as a moderate on the bench. The Reagan Revolution truly began with the resignation of Warren Burger as Chief Justice. This allowed the Administration to elevate the most conservative Associate Justice, William Rehnquist, to the Chief Justice position¹² and to appoint an even more conservative replacement justice, Antonin Scalia. We trace the effects of the Reagan Revolution to this moment and the 1986 term of the Court. The Administration sought to advance its revolution further two years later with the appointment of Robert Bork to replace Justice Powell, but this effort failed before the Senate. Instead, the Administration successfully placed Anthony Kennedy, who was regarded as somewhat less conservative, on the bench.¹³ The Administration appointed only three new justices, two of whom are generally perceived as being moderates. While this might call the effectiveness of the Reagan Revolution into question, it is this widespread perception that remains to be tested.

The ensuing Bush Administration generally followed the judicial appointment practices established by Reagan.¹⁴ After Reagan left office,

⁹ See GOLDMAN, *supra* note 7, at 297–98 (summarizing the speech).

¹⁰ *Id.* at 305.

¹¹ Karen O’Connor & Jeffrey A. Segal, *Justice Sandra Day O’Connor and the Supreme Court’s Reaction to Its First Female Member*, in *WOMEN, POLITICS, AND THE CONSTITUTION* 95 (Naomi B. Lynn ed., 1990).

¹² The conservatives at the Reagan Justice Department regarded Rehnquist as an “intellectual giant” who “fully lived up to conservative hopes.” *Whittington, supra* note 2, at 13. He was “viewed as the perfect chief justice for a Reagan Court.” *Id.* at 14.

¹³ The perceived ideology at the time of appointment has been measured with scores based on newspaper editorial discussion of the candidates. See Jeffrey Segal & Albert Cover, *Ideological Values and the Votes of U.S. Supreme Court Justices*, 83 *AM. POL. SCI. REV.* 557–65 (1989). The scale runs from 0 as most conservative to 1 as most liberal. By this measure, Scalia was a .00, Bork a .10, Kennedy a .37, and O’Connor a .48. Charles M. Cameron et al., *Senate Voting on Supreme Court Nominees: A Neoinstitutional Model*, 84 *AM. POL. SCI. REV.* 525, 530 (1990).

¹⁴ See WASBY, *supra* note 7, at 104 (noting that Bush made some changes but retained the “basic elements” of the Reagan process).

George H.W. Bush appointed David Souter and Clarence Thomas to the Court, the latter of which could be considered a furtherance of the Reagan Revolution, especially insofar as he took the seat of a strong liberal vote, Thurgood Marshall. The Democratic President Clinton subsequently appointed Ruth Bader Ginsburg and Stephen Breyer, who could hardly be expected to advance the Reagan Revolution. William Rehnquist remained the Chief Justice, though, and his positional authority may have continued to advance the Reagan judicial agenda, even with the presence of new Justices.

B. The Results

The practical effect of what we call the Reagan Revolution on the Supreme Court is contested. Many liberals have ascribed great success to the Reagan plan to remake the courts. Cass Sunstein contends that “[s]ince the election of President Reagan, a disciplined, carefully orchestrated, and quite self-conscious effort by high-level Republican officials in the White House and the Senate has radically transformed the federal judiciary.”¹⁵ It is now common for liberals to lament the new conservative “judicial activism” at the Court. The National Director of the ACLU declared that the Rehnquist Court was a “conservative court that has also become one of the most activist courts in American history.”¹⁶ Many others have made similar claims.¹⁷ Liberals claim that the Court has been too quick to strike down federal laws with which the Justices may disagree.¹⁸ Thus, even with the presence of the Clinton justices, liberals argue that the Reagan Revolution has significantly altered the Supreme Court.

Conservatives, however, have not been so positive on the success of the Reagan Revolution. Many conservatives continue to complain of liberal courts and point to decisions like *Lawrence v. Texas*¹⁹ as evidence that a liberal Court

¹⁵ CASS R. SUNSTEIN, *RADICALS IN ROBES: WHY EXTREME RIGHT-WING COURTS ARE WRONG FOR AMERICA* 9 (2005).

¹⁶ Edward Walsh, *An Activist Court Mixes Its High-Profile Messages*, WASH. POST, July 2, 2000, at A6.

¹⁷ See, e.g., Jack M. Balkin & Sanford Levinson, *Understanding the Constitutional Revolution*, 87 VA. L. REV. 1045, 1092 (2001) (arguing that we are undergoing a revolutionary period of conservative judicial activism); Orin S. Kerr, *Upholding the Law*, LEGAL AFF., Mar.–Apr. 2003, at 31 (“Accusations that conservatives on the Rehnquist Court are the real judicial activists have become commonplace.”); Larry D. Kramer, *Popular Constitutionalism, Circa 2004*, 92 CAL. L. REV. 959, 960 (2004) (referring to the “unparalleled activism” of the Rehnquist Court); Erwin Chemerinsky, *Perspective on Justice*, L.A. TIMES, May 18, 2000, at B11 (contending that the Court has engaged in “aggressive conservative judicial activism”).

¹⁸ See, e.g., Paul Gewirtz & Chad Golder, *So Who Are the Activists?*, N.Y. TIMES, July 6, 2005, at A19 (reporting results suggesting that conservative justices have been unusually likely to strike down federal laws).

¹⁹ 539 U.S. 558 (2003).

persists in many ways. Conservatives were disappointed by the failure to overturn *Roe* and have objected to other decisions, such as finding the death penalty unconstitutional for minors.²⁰ They may lament that the Reagan appointees have “come under the sway of elite opinion” to favor liberal ends.²¹ Tom DeLay continued to accuse “left-leaning courts of imposing a ‘judicial supremacy’ over the country to implement liberal policies.”²² The Rehnquist Court is said to have “disappointed conservatives and libertarians in a series of high-profile cases including those involving college affirmative action programs, limits on campaign contributions, the scope of congressional commerce power, and the rights of property owners.”²³

Claims about the effect of the Reagan Revolution at the Supreme Court thus break down along ideological lines. Liberals lament the great conservatism of the Court, while conservatives complain of a failed revolution. Neither is truly a reliable source, and more disciplined analysis of the Court’s effect is required.²⁴ Linda Greenhouse declared that Rehnquist’s tenure as Chief was “one of the most consequential,” in which he “managed to translate many of his long-held views into binding national precedent,”²⁵ but this journalistic perspective is only a casual one.

Some empirical research has sought to more rigorously measure the effects of the Reagan Revolution on subsequent Supreme Court decision making.²⁶

²⁰ See, e.g., Jane Roh, *Rehnquist’s Legacy: A Balanced Court*, FOXNEWS.COM, June 14, 2005, <http://www.foxnews.com/story/0,2933,159308,00.html> (“Rehnquist may have disappointed conservatives by not being more driven by social issues or politics.”); Kenneth Jost, *Supreme Court’s Future: The Issues*, CONG. Q. RESEARCHER, Jan. 28, 2005, at 77, 80 (quoting Erwin Chemerinsky on the Rehnquist Court and observing that the Court had “disappointed conservatives,” as in “some key areas, where conservatives would have wanted to see more, it didn’t happen”).

²¹ See Greg Pierce, *Inside Politics*, WASH. TIMES, Dec. 12, 2003, at A8 (quoting John Fund of *The Wall Street Journal* on Justice Sandra Day O’Connor).

²² See Donald Lambro, *DeLay Slams Court Activism as “Autocracy”; Republican Sees Breach of Democratic Process*, WASH. TIMES, Aug. 15, 2005, at A4.

²³ James W. Ely, Jr., “*Poor Relation*” *Once More: The Supreme Court and the Vanishing Rights of Property Owners*, 2005 CATO SUP. CT. REV. 39, 40 n.6.

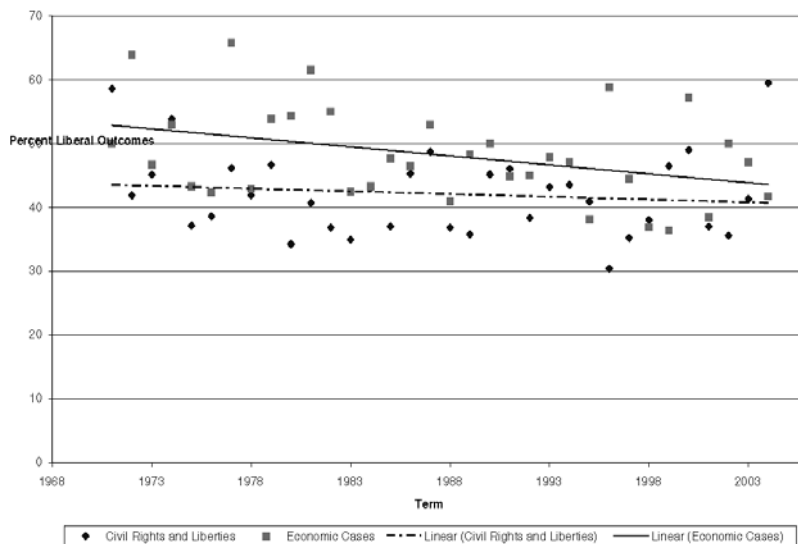
²⁴ Justice Ginsburg suggested that the term judicial activism was “a label too often pressed into service by critics of court results rather than the legitimacy of court decisions.” Donald H. Ziegler, *The New Activist Court*, 45 AM. U. L. REV. 1367, 1367–68 (1996) (quoting a statement made by Justice Ginsberg at her confirmation hearings). Justice Scalia has likewise contended that claims of Supreme Court activism are “nothing but fluff.” See Charles Lane, *No Unanimity on Holding on to High Esteem*, WASH. POST, Apr. 1, 2002, at A13.

²⁵ Linda Greenhouse, *William H. Rehnquist, Architect of Conservative Court, Dies at 80*, N.Y. TIMES, Sept. 5, 2005, at A16.

²⁶ See, e.g., Frank B. Cross & Stefanie Lindquist, *Doctrinal and Strategic Influences of the Chief Justice: The Decisional Significance of the Chief Justice*, 154 U. PA. L. REV. 1665 (2006).

The study found that the ascendance of William Rehnquist to Chief Justice had some demonstrable effect on Supreme Court decisions. This era showed an increase in court cohesion and a dramatic effect on docket size.²⁷ The Rehnquist Court also made distinct changes in the overall Court agenda and in patterns of decisions upholding or striking state and federal legislation.²⁸ The most straightforward measure of an effect for the Reagan Revolution might be expected to appear in a pattern of more conservative decisions. However, an examination of decision outcomes in the Court shows only a very limited effect. *Figure 1* displays the percentage of liberal votes in economic cases and civil rights and civil liberties cases and associated trend lines over the past three decades.

Figure 1²⁹: Liberal Decisions by Issue Area



The data show a slight increase in conservatism over this three-decade period, but no remarkable change associated with the onset of the Reagan Justices or

²⁷ *Id.* at 1693–96 (discussing the rate of decisions with concurrences and dissents, as well as the number of plurality opinions issued during the Rehnquist era).

²⁸ *Id.* at 1703–06 (discussing the Rehnquist Court’s inclination toward invalidating federal statutes and upholding state statutes as evidence of a commitment toward federalism).

²⁹ Adapted from *id.* based on data from the United States Supreme Court Database. *Id.* at 1688.

Rehnquist Court in 1986.³⁰ The change in noneconomic civil rights and civil liberties case outcomes has been vanishingly small, showing no obvious increase in ideological effect.³¹

The research to date suggests that Reagan appointees have been conservative jurists, but does not suggest that they were in any way revolutionary. However, this research is limited by its focus on decision outcomes.³² Analysis of such outcomes is a very crude measure of Supreme Court output.³³ A decision might be liberal in the sense that it ruled for the liberal party to the action, but the content of its opinion could be much less liberal than another hypothetical liberal decision in the same case, or even than the presumed state of the existing law at the time of the decision.

The truly significant aspect of Supreme Court decisions is found in the opinions issued, though this topic has seen little study.³⁴ The decision in a case resolves only the dispute between the parties; the opinion establishes the law for all future cases that arise and, therefore, structures the sorts of disputes that reach the courts. Opinions can be written in very different ways while reaching the same outcome. Thus, it is significant that *Roe* and *Lawrence* used privacy, rather than equal protection, grounds for their decisions and significant that *Planned Parenthood v. Casey*³⁵ cut back on, but did not fully overturn, the ruling in *Roe*.³⁶ A decision might yield an immediate ideological outcome of one sort—say conservative—but that same opinion could set a precedent that was useful to advance liberal ends in future cases. Outcome-based research fails to capture the differential future significance of Supreme Court opinions. Some Court decisions are seminal and set the path for a major change in the state of the law. Other decisions may be trivial and have little practical impact on the law. Even the leading researchers of judicial outcomes have declared that it is the “opinion of the Court” that “constitutes the core of

³⁰ *See id.*

³¹ *See id.*

³² *See id.* (noting that such findings “show nothing about the content of the opinions issued by the Court or the content of the cases taken on certiorari”).

³³ *See id.*

³⁴ Citation analysis has been used to some degree, such as to capture the importance of various justices. *See, e.g.*, Montgomery N. Kosma, *Measuring the Influence of Supreme Court Justices*, 27 J. LEGAL STUD. 333 (1998); William M. Landes, Lawrence Lessig & Michael E. Solimine, *Judicial Influence: A Citation Analysis of Federal Courts of Appeals Judges*, 27 J. LEGAL STUD. 271 (1998). This research has neither incorporated network analysis nor been integrated into the political analyses, however.

³⁵ 505 U.S. 833 (1992).

³⁶ *See id.*

the Court's policy-making process."³⁷ The relevance of citations was evidenced by Samuel Alito in his confirmation hearings, when he testified that "when a precedent is reaffirmed, that strengthens the precedent."³⁸

Empirical researchers have typically analyzed outcomes, and not opinions and precedents, because the latter are much harder to reduce to a quantitative measure. One recent book has begun the empirical study of precedent.³⁹ Because "precedents do not necessarily remain static over time," the book examined how they were used by future Courts.⁴⁰ The authors hypothesized that ideologically minded justices would seek to strengthen ideologically concordant precedents by citing them and to weaken ideologically discordant precedents by distinguishing them or overruling them, if possible. They also hypothesized that justices would most want to weaken the ideologically discordant precedents that were the strongest or most vital. They studied all Supreme Court cases issued between the 1946 and 1999 terms of the Court, and their hypotheses were almost universally confirmed. They concluded that "the justices interpret precedent in order to move existing precedents closer to their preferred outcomes and to justify new policy choices."⁴¹

This seminal work demonstrates the significance of the choice of precedent citation at the Court but cannot provide an overall picture of the state of Supreme Court precedent at various points in time. The use of a full network of legal precedent, discussed in the following Part, enables some broader consideration of the content of Rehnquist Court opinions and their effect on the overall composition of the law.

³⁷ JEFFREY A. SEGAL & HAROLD J. SPAETH, *THE SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED* 357 (2002); see also James F. Spriggs II & Thomas G. Hansford, *Measuring Legal Change: The Reliability and Validity of Shepard's Citations*, 53 POL. RES. Q. 327, 328 (2000) ("[T]o understand judicial decision-making fully we must move beyond votes and study what is arguably the judiciary's most important policy output—the precedents set by court opinions.").

³⁸ *Confirmation Hearing on the Nomination of Samuel A. Alito, Jr. to be an Associate Justice of the United States*: Hearing Before the Sen. Comm. on the Judiciary, S. Hrg. 109-277, 109th Cong. (2006); see also *Court in Transition: From the Hearings*, N.Y. TIMES, Jan. 11, 2006, at A26 (quoting Justice Alito's confirmation hearing testimony).

³⁹ See THOMAS G. HANSFORD & JAMES F. SPRIGGS II, *THE POLITICS OF PRECEDENT ON THE U.S. SUPREME COURT* 3 (2006) ("What is most striking is the paucity of systematic theoretical or empirical studies that treat the law as a variable to be explained.").

⁴⁰ *Id.* at 2.

⁴¹ *Id.* at 130.

II. THE NETWORK OF LAW

This Part takes advantage of a newly available tool for the study of judicial opinions. Because precedent is central to opinions, it is possible to define a network of Supreme Court opinions based on their citation to other opinions. The Part briefly describes the nature of networks and the network data that we use in our study.

A. *The Nature of Networks*

Networks gained a share of social notoriety with the “Kevin Bacon” or “Six Degrees of Separation” games. More rigorous network analysis had been pioneered by sociologists and called *social network analysis*. The analysis began in the 1930s, with scientists attempting to study “the flow of information and ideas through groups.”⁴² The study expanded by connection with mathematical graph theory that enabled the depiction of the full range of network connections, and the field has become an important one. One of the most influential sociology papers ever written examined the relative practical significance of even relatively weak social interactions.⁴³ This sociological research typically examined relationships among individuals, with each individual representing a network node and relationships representing connections among the nodes, sometimes called links or edges.

Networks have seen increasing study in recent years.⁴⁴ Much attention to the nature of networks has addressed Internet connections of websites.⁴⁵ The research goes far behind the World Wide Web, though, as scientists have studied the networks of “food webs, electrical power grids, cellular and metabolic networks, the World-Wide Web, the Internet backbone, the neural network of the nematode worm *Caenorhabditis elegans*, telephone call graphs, . . . and the quintessential ‘old-boy’ network, the overlapping boards of directors of the largest companies in the United States.”⁴⁶ Research on networks has become an important part of scientific understanding across numerous disciplines.

⁴² JOHN SCOTT, *SOCIAL NETWORK ANALYSIS: A HANDBOOK* 7 (2d ed. 2000).

⁴³ See Mark S. Granovetter, *The Strength of Weak Ties*, 78 AM. J. SOC. 1360 (1973).

⁴⁴ For an accessible introduction to this body of research, see generally ALBERT-LÁSZLÓ BARABÁSI, *LINKED: THE NEW SCIENCE OF NETWORKS* (2002).

⁴⁵ Regarding the study of the network structure of the Internet, see Réka Albert et al., *Diameter of the World Wide Web*, 401 NATURE 130 (1999).

⁴⁶ Steven H. Strogatz, *Exploring Complex Networks*, 410 NATURE 268, 268 (2001) (citations omitted).

Networks have different attributes relevant to their study. For example, networks may be undirected or directed. An undirected network is one where links go both ways, as two friends may phone one another. A directed network is one where links can only go one direction between nodes, which is the case in the legal network, as a later opinion can cite an earlier one, but not vice versa. The links may also be “valued” in measuring the strength of a link, or “binary” in simply identifying the link’s existence. For our current purposes, we simply use binary links with all citations treated as equivalent, though additional data would allow the valuation of those links by strength of citation in the legal network.

Researchers have also engaged in network analysis of academic citations. These studies have considered the degree to which published scientific papers cite other published papers in the same or external disciplines.⁴⁷ This research is analogous to our study, as reference to a prior scientific study is somewhat like a judicial reference to a prior decision, and both are time-directed networks. The study of the legal network of citations can draw on this now-substantial body of network research in other areas.

B. The Legal Network Data

Our legal network data begin with all Supreme Court majority opinions and connections based on the cases that the citations among them. The data were provided by LexisNexis in a textual format and drawn from the widely used *Shepard’s Citations Service*.⁴⁸ We imported the data in a database format and developed a Matlab 7.0 routine to generate a textual file with a network structure for every year from 1885 to 2005. This used an edge-nodes format, showing each pair of citing and cited cases with their unique identifying codes. In this network model, the cases are the vertices and citations are connections between cases. The network is directed because the citation runs only one direction, from the citing to the cited case. In 2005, the network had 298,566 nodes, but this set included every Court decision, even relatively minor ministerial actions such as denials of writs of certiorari. We cleaned the data by eliminating all cases that had not been cited at least once by some other case, because we are interested in the use of cases of precedent and a case that

⁴⁷ See, e.g., M.E.J. Newman, *Scientific Collaboration Networks. I. Network Construction and Fundamental Results*, 64 PHYSICAL REV. E 016131 (2001); S. Redner, *How Popular Is Your Paper? An Empirical Study of the Citation Distribution*, 4 EUR. PHYSICAL J. B 131 (1998).

⁴⁸ The authors would like to express their great gratitude to LexisNexis for its generosity in providing citation data and its assistance in preparing it for analysis.

was never cited would appear to have little or no precedential value. The data was cleaned using Pajek, which is a widely used software program for analyzing and visualizing large networks.⁴⁹ In 2005, the cleaned network had a total of 47,869 nodes.

The distribution of citation references is highly skewed. Only two percent of the total number of decided cases receives fifty-six percent of all citations in the network. Roughly 28,000 cases have been cited only once. This is a common pattern found in most citation and other forms of networks, often called a “power law tail.” In such networks, most nodes have few links, while a small number of nodes have a great many links. The legal network appears thus to share a mathematical structure with other networks that have been studied.

By its nature, the legal network develops new vertices, or nodes, as judges write opinions citing cases. These new nodes are not simply piled upon the preexisting network—they affirmatively change the form of the network. They may bring groups of cases closer together, by linking them with citations, or they may separate cases from the body of precedent, by declining to cite those decisions.

The methods that have proved valuable in examining other networks have been little-used to analyze legal networks. Research on the network of law is just beginning and has generally considered only certain descriptive characteristics, such as identifying the “most important” decisions of the Court.⁵⁰ This field offers the promise of refining “our understanding of the ‘seam less web’ to which the law is often analogized.”⁵¹ This technique enables the testing of various hypotheses, including those involving the political content of the law.⁵² In this article, we seek to broaden the scope of network research to address the question of whether the attempted Reagan Revolution indeed had a significant effect on the state of law in the Supreme Court.

⁴⁹ See, e.g., WOUTER DE NOOY ET AL., EXPLORATORY SOCIAL NETWORK ANALYSIS WITH PAJEK (2005).

⁵⁰ See, e.g., Seth J. Chandler, *The Network Structure of Supreme Court Jurisprudence*, 10 MATHEMATICA J. (2005) (supplying some Supreme Court network-wide data and identifying leading cases); Wayne McIntosh et al., *Using Information Technology to Examine the Communication of Precedent: Initial Findings and Lessons from the CITE-IT Project*, Mar. 2005 (unpublished manuscript, presented at the 2005 Annual Meeting of the W. Political Sci. Ass’n); *The Wisdom of Hercules*, ECONOMIST, Aug. 27, 2005, at 65 (describing some of the preliminary research and the light it sheds on the most important Supreme Court decisions).

⁵¹ Chandler, *supra* note 50, at 23.

⁵² One early study found very limited ideological content in choice of cases cited, but its scope was limited. See Charles A. Johnson, *Follow-up Citations in the U.S. Supreme Court*, 39 W. POL. Q. 538 (1986).

III. THE REAGAN REVOLUTION IN THE NETWORK OF LAW

This Part tests the effects of the Reagan Revolution by examining its consequences for the network of law described above. There are many tools with which to analyze networks, and we examine the effect of the Reagan Revolution on the Supreme Court through several commonly employed network-wide measures. The tools are densification, clustering, and diameter. These tools do not report information on particular cases but are accepted measures of the full network itself. This Part begins by visually depicting the changes in these measures over time. The graphs begin in 1937, because that is the beginning date for information on the political component of Supreme Court decisions, which will be necessary for our statistical analyses.

Section A displays the effect of the Reagan Revolution graphically, using several network measures. We use data starting from 1937, because this is the first date for which reliable data are available on other variables of interest for our study, such as the ideological direction of Supreme Court justice votes. We begin with graphical displays of the network measures over time and can observe an apparent effect of the Rehnquist Court. We follow with statistical analyses of the effect of the Court over time, with several control variables.

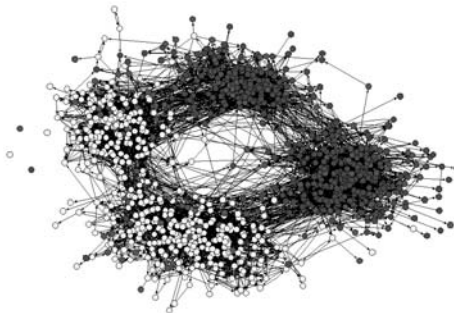
A. Visual Effects of the Reagan Revolution

This section graphically displays changes in certain measures of the network of Supreme Court decisions over time. We use three objective measures of network characteristics, called densification, clustering, and diameter. These metrics are regularly used in network research, and all capture different dimensions of the integration of a given network. As density and clustering grow, and diameter decreases, a network gains in closeness of connection and integration. If a Court were to substantially change the pattern of citations and importance of various precedents, for ideological or other reasons, one might expect to see a change in these measures. This section graphically displays those measures over time in the legal network.

1. *Densification*

Density is one of the most “widely used concepts” and describes the “general level of linkage” within the network.⁵³ Density was a measure in one of the early sociological network studies of neighborhood relationships.⁵⁴ This study examined the degree to which people were connected and found that the densest networks were composed by those that included more relatives, meaning that they maintained more mutual contacts with one another.⁵⁵ Networks of low density were describes as “sparsely knit,” meaning that individuals had contacts on whom they could rely for help, but had fewer individuals upon whom they could rely. *Figures 4a* and *4b* depict two different high school networks, one a friendship network that is relatively dense and the other a dating network that is relatively sparse.⁵⁶

Figure 4a: Dense Network Depiction

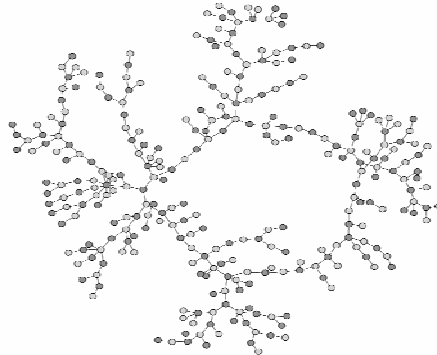


⁵³ Scott, *supra* note 42, at 69. The significance of the density measure is discussed in Jure Leskovec et al., *Graphs over Time: Densification Laws, Shrinking Diameters and Possible Explanations*, in PROC. 11TH ACM SIGKDD INT’L CONF. KNOWLEDGE DISCOVERY & DATA MINING (2005).

⁵⁴ Barry Wellman, *The Community Question: The Intimate Networks of East Yorkers*, 84 AM. J. SOC. 1201 (1979).

⁵⁵ *Id.* at 1215.

⁵⁶ The graphic depiction in *Figure 4a* is taken from James Moody, *Race, School Integration, and Friendship Segregation in America*, 107 AM. J. SOC. 679 (2001). The graphic depiction in *Figure 4b* was created by Mark Newman using data from Peter S. Bearman et al., *Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks*, 110 AM. J. SOC. 44 (2004).

Figure 4b: Sparse Network Depiction

Density is strictly related to the “average degree” of the network.⁵⁷ The average degree AD at time t is defined as:

$$AD(t) = \frac{e(t)}{n(t)},$$

where e is the global number of edges (in legal networks, citations) and n is the number of nodes of the network (in legal networks, cases). Here, for each node, we take into account both the number of received citations (the “in-degree”) and the number of outgoing citations (the “out-degree”). In theory, network density may range from 0 (no connections) to 1 (every node connects to every other node). In the network of law, a density of 1 would mean that every case cited every other case.⁵⁸ While this is obviously chronologically impossible, relatively more connections or citations among the cases mean a higher density measure.

Most models of network evolution, including the well-known preferential-attachment mechanism,⁵⁹ are based on the assumption that the average degree of real networks remains constant over time. In these models, the number of edges grows linearly with the size of the network, so that as the network grows larger, its density remains the same. Recent work has revealed, however, that in many real networks, including citation networks, a process of

⁵⁷ See Newman, *supra* note 47 (using this as a measure in scientific citation networks).

⁵⁸ See STANLEY WASSERMAN & KATHERINE FAUST, *SOCIAL NETWORK ANALYSIS: METHODS AND APPLICATIONS* 102 (1994) (describing measure of density of network relationships).

⁵⁹ See BARABASI, *supra* note 44.

“densification” occurs.⁶⁰ Networks such as the legal citation network evolve over time by adding nodes and edges. Leskovec, Kleinberg, and Faloutsos discovered that many real-world graphs have what they call a “densification” process: The number of edges is related to the number of nodes by a power-law model with a superlinear exponent. The average degree of the network consequently has a power-law growth with a sublinear kernel. Leskovec, Kleinberg, and Faloutsos found these dynamics in two citation networks—the ArXiv scientific paper network and the U.S. Patents network—as well as in a collaboration network and a physical network. These effects are shown in *Figure 5*.

⁶⁰ See Leskovec et al., *supra* note 53.

Figure 5: Densification in Networks

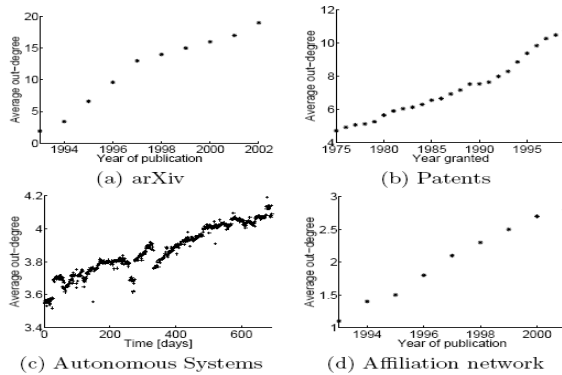


Figure 1: The average node out-degree over time. Notice that it increases, in all 4 datasets. That is, all graphs are *densifying*.

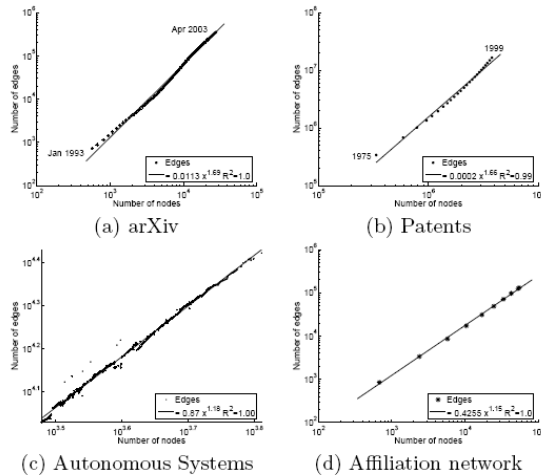


Figure 2: Number of edges $e(t)$ versus number of nodes $n(t)$, in log-log scales, for several graphs. All 4 graphs obey the Densification Power Law, with a consistently good fit. Slopes: $a = 1.68, 1.66, 1.18$ and 1.15 , respectively.

Our analysis finds that a similar densification process was at work in the U.S. Supreme Court citation network. The densification in our dataset had (until 1983) the functional shape:

$$e(t) \propto n(t)^\alpha ,$$

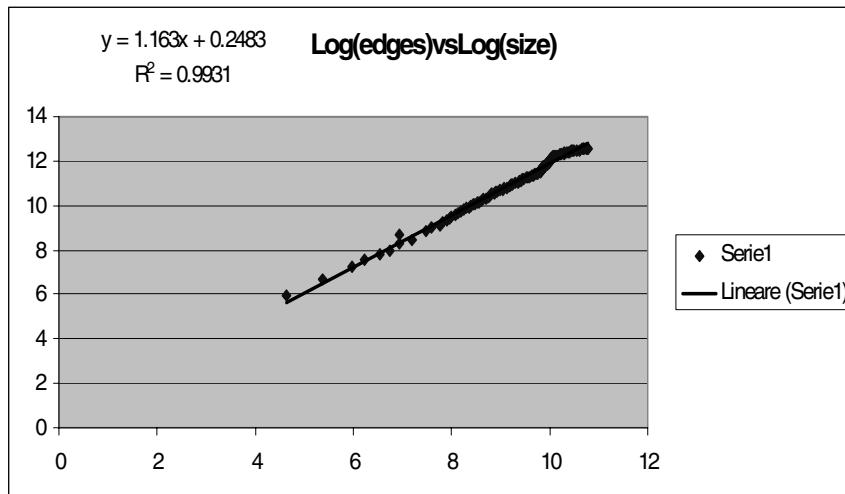
where $e(t)$ is the number of edges and $n(t)$ the number of nodes in the network at time t .

We have a point $[e, n]$ for every year of existence of our dataset. A power-law model can be translated into a linear relationship in a log-log scale:

$$\log[e(t)] \propto \alpha \log[n(t)]$$

The exponent of the power-law is the slope of the line in the log-log scale. Applying a linear regression to the logarithm of the number of edges in the different years, and the logarithm of the number of nodes, strongly confirms the presence of a power-law densification process, as shown in *Figure 6* below.

Figure 6: Power-Law Growth of Supreme Court Network



Thus, the densification process in the Supreme Court citation network can be described as

$$e(t) \propto n(t)^{1.163},$$

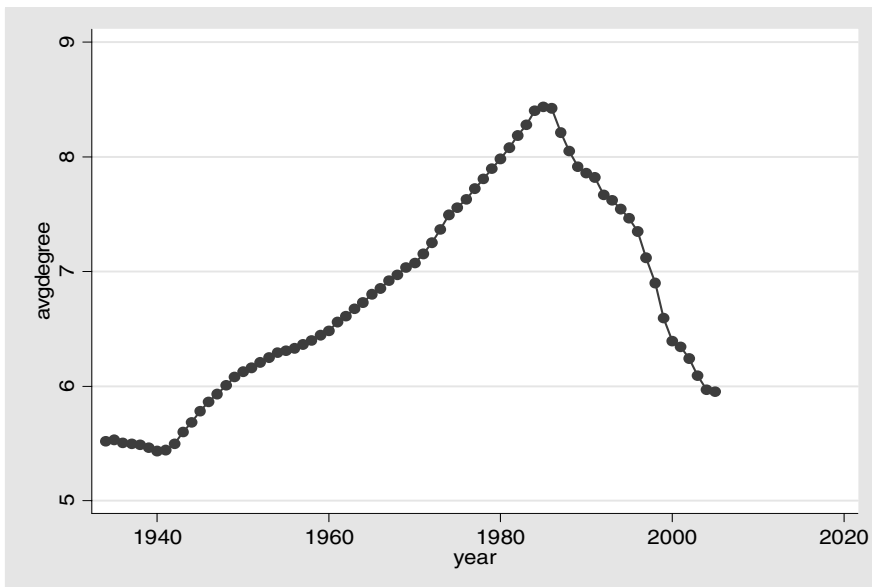
with a superlinear exponent equal to 1.163, and with a very high quality of the fit.

A power-law relationship between edges and size leads to the following shape for the evolution of the average degree:

$$d(t) \propto \frac{n(t)^\alpha}{n(t)} = n(t)^{\alpha-1}$$

This increasing average degree demonstrates that the Supreme Court constantly increased its usage of citations, thus increasing the level of “linkage” or “connectivity” in the Supreme Court citation network over time. Interestingly, however, this long-established densification process in the citation network changed radically in the mid-1980s, evidencing an important change in Supreme Court citation practice. *Figure 7* displays this effect.

Figure 7: Supreme Court Network Densification Over Time



The effect here is quite stark. Although prior researchers have suggested that it was the Warren Court era that altered Supreme Court reliance on precedent,⁶¹ our data make clear this was not the case. The century saw a steady increase in network densification. This included the Warren Court era, suggesting that the Warren Court, for all its dramatic decisions, was able to ground those rulings in historic precedent. Immediately after the Rehnquist and Scalia appointments, however, densification immediately began to drop and continued to do so steadily. Thus, the densification scale suggests some influence from the Reagan Revolution, especially since it counteracted the natural network tendency toward increasing densification. Apparently, something purposeful occurred to change network composition at the time of the Rehnquist Court. The post-Reagan appointments to the Court have not altered this trend.

2. *Clustering Measurement*

Networks are also measured by clustering. In the early sociological research, the clusters were communities. They represented discrete groups of people who knew each other or who shared many mutual friends. The cluster of a group of friends can be measured by the degree to which they all know each other.⁶² Some measure of clustering appears to occur in all real-world networks.⁶³

The analysis of clusters is an active area of network research, which has even developed its own Internet search engines.⁶⁴ In the legal network, these are “friendly” cases that typically cite similar precedents. Clustering reflects to some degree the integration of a network. In general, as networks grow, clustering actually decreases. However, different networks can show different degrees of clustering, depending on the nature of internodal collaboration.⁶⁵

One would naturally expect to find clustering in the network of law because of the nature of the relevance of precedent. A Commerce Clause decision could be expected to cite past precedents that involved the Commerce Clause.

⁶¹ See *The Wisdom of Hercules*, *supra* note 50.

⁶² See BARABÁSI, *supra* note 44, at 46–47 (noting that a “clustering coefficient tells you how closely knit your circle of friends is,” such that a “number close to 1.0 means that all your friends are good friends with each other”).

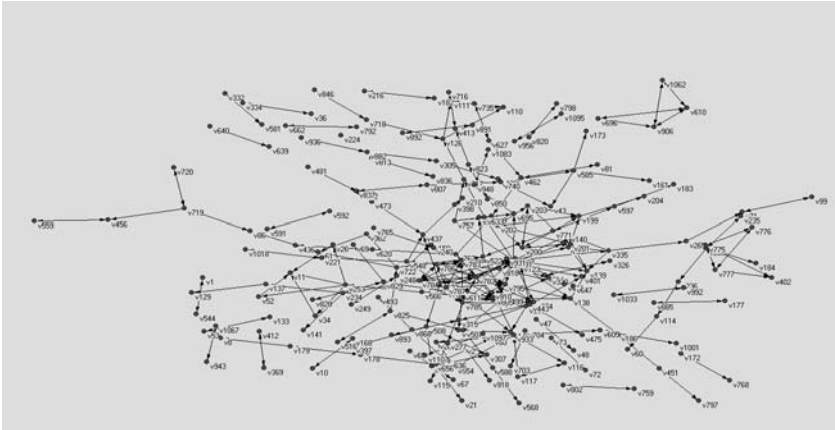
⁶³ *Id.* at 51.

⁶⁴ See Clusty, <http://clusty.com>.

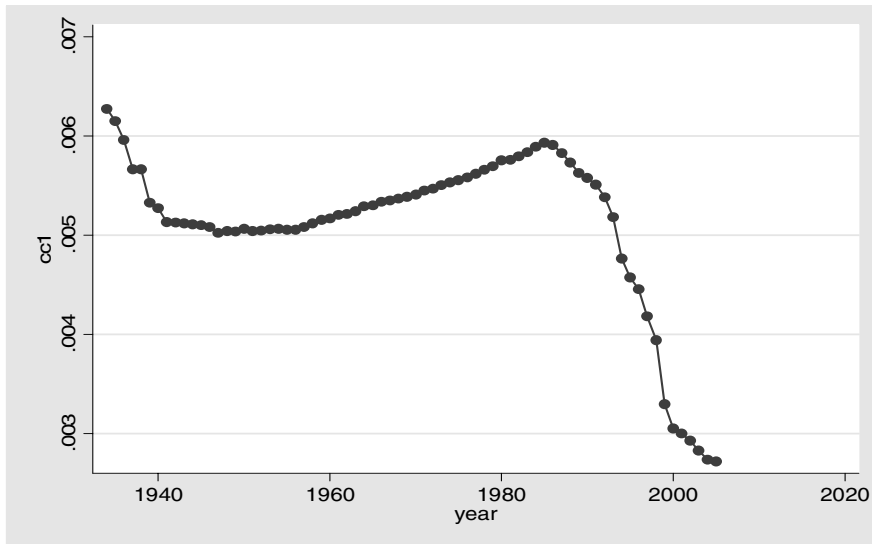
⁶⁵ See Newman, *supra* note 47, at 407 (using this measure and finding that medical citations show less clustering than is found in the “hard sciences”).

It would be much less likely to cite precedents that focused on interpretations of the Bill of Rights, though these decisions might occasionally be relevant. Thus, the nature of legal citation would logically be expected to produce certain defined clusters of case nodes. *Figure 8* depicts the U.S. Supreme Court network in 1986 and reveals the beginning of clustering near the center

Figure 8: Clustering in the Supreme Court Network



We use two cluster measures, labeled CC1 and CC2. CC1 is defined as the number of edges in the first neighborhood of a node, or the maximum number of possible connections in the first neighborhood. This measures the concentration of connections within each cluster. In the network of law, this evidences the frequency with which cases within a select group cite one another. A higher CC1 score would indicate that the network has groups of cases that are tightly integrated and cite one another more frequently. When the CC1 measure declines in the legal network, that fact probably evidences some disruption within particular areas of the law. *Figure 9* shows CC1 clustering over time.

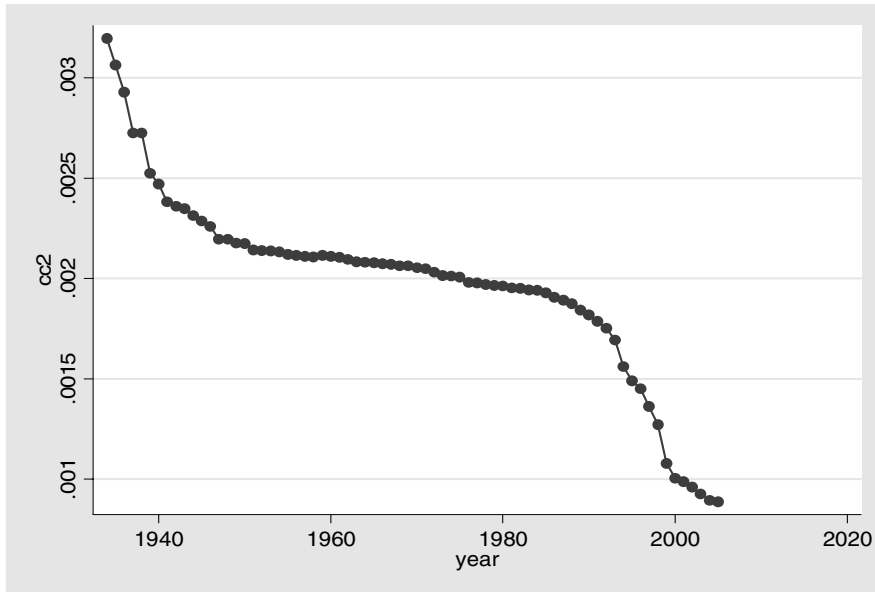
Figure 9: Supreme Court CC1 Clustering Over Time

The effect of the Rehnquist Court is dramatic on this measure. After several decades of steady increase in the CC1 cluster scale, a precipitous drop is associated with the Rehnquist Court. This implies that the Court made substantial changes in the precedent network in various discrete areas of the law. The network-wide measure does not enable us to discern exactly what changes were made in which areas of the law, but it demonstrates that the Court produced a substantial change in citation patterns.

CC2 is a somewhat broader measure of the network's clustering. CC2 is defined as the number of connections in the first neighborhood of a node, or the number of connections in the first and second neighborhood. A high CC2 coefficient means that there are few links from the first neighborhood and the second neighborhood, which means that the first neighborhood is a strong community but relatively isolated from the other neighborhoods. In a high-school social network that had a high CC2 coefficient, for example, members of cliques would be tightly connected with other members of their own clique but rarely have social contacts with students not in their clique. CC2 will go up either as the connections of a nodal cluster increase (also associated with an increase in CC1) or as the connections from that cluster to the outside

decrease. In the legal network, the latter measure would capture the degree to which clusters of cases (such as a Commerce Clause cluster) refer to external clusters (such as a First Amendment cluster), by direct applicability or more extended analogy. The historic pattern of CC2 clustering in the legal network is displayed by *Figure 10*.

Figure 10: Supreme Court CC2 Clustering Over Time



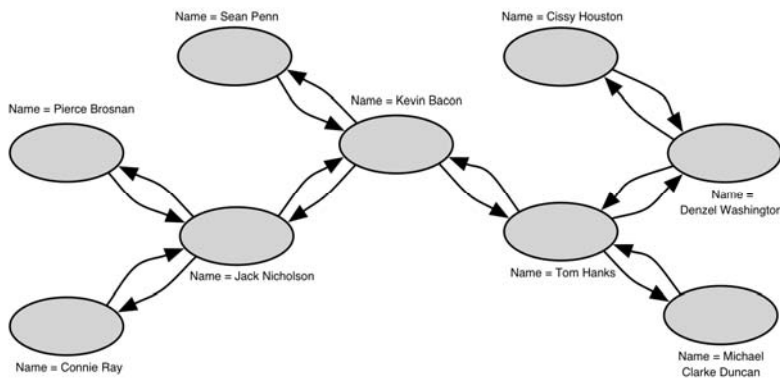
CC2 clustering has been on a steady decline during our period of reference, but the rate of decline has varied considerably. Again, the graph visually shows a dramatic change with the Rehnquist Court, as a very slow decline in CC2 clustering became a quite rapid decline after 1986. The decline of both cluster measurements is consistent with our tentative conclusions about the densification measure—that the Rehnquist Court has been loosening the bounds of preexisting precedent in the legal network.

3. Diameter

Diameter is another tool that is used to measure the level of integration of a network. Network diameter may be measured in a number of ways, but the most straightforward is to measure the shortest distance between the two most

widely separate nodes in the network. This distance is measured by the number of steps, or links, one must traverse to get from one node to the other. In general, the greater the diameter of a network, the less its overall integration, because a large diameter means that there are nodes in the network that are very far from each other. Thus, in *Figure 11* below, a subnetwork of Hollywood movie actors is shown, inspired by the popular “Kevin Bacon” game, in which players try to find the shortest path from a given actor to Kevin Bacon, where costarring in a movie counts as a link between two actors. The diameter of the network shown is five, because five links separate the two most widely separated actors in the network (Connie Ray or Pierce Brosnan, and Cissy Houston).

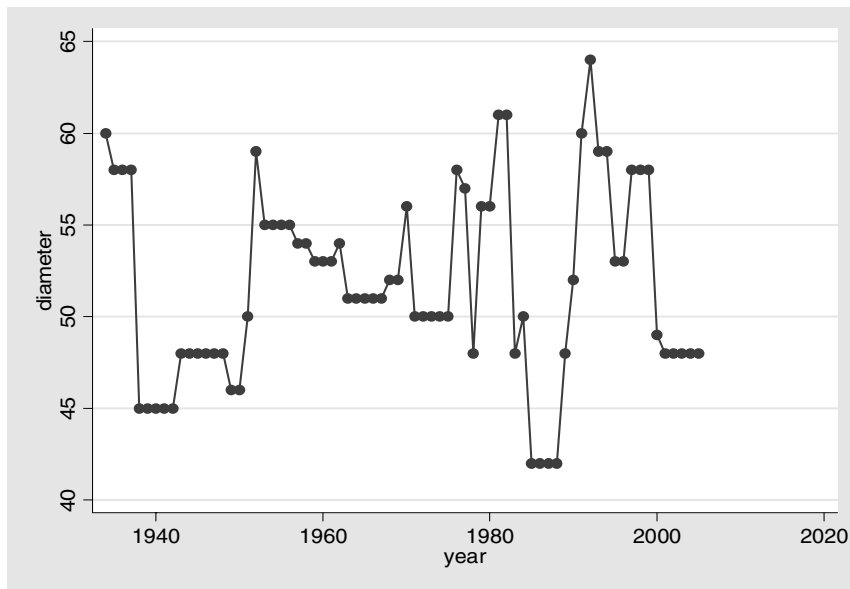
Figure 11: Network Diameter



Measuring the diameter of the legal network gives us a measure of the overall integration of the full network. A smaller diameter means that the nodes are closer together with many short connecting paths, while a higher diameter can mean that nodes are found in relatively isolated groups, more remote from one another. A smaller diameter in the legal network would mean that the prior precedents have been linked more closely. In the legal network, new Courts build on the existing network. While they might functionally increase diameter by overruling a key intermediate decision, this does not appear in our results, as overruled decisions remain in the network and may be cited even after being overruled. Diameter might be reduced by a decision that links two past decisions that previously had the longest path. Diameter might be increased by adding new decisions that are weakly linked to some past decision, thus creating a new path that was longer than any previous ones.

Network research has found that the diameter of networks tends to decrease over time as a natural consequence of network growth, even when networks are randomly created.⁶⁶ This is especially true for real power-law networks, which seem naturally to integrate over time. These findings do not necessarily translate into the network of law, however, because the Supreme Court purposively pursues goals other than simple network integration. Indeed, a Court might well affirmatively expand the diameter of the network, in order to move the body of law toward a direction that it prefers by marginalizing certain undesirable past cases. This is an area where the legal network apparently differs from many other networks studied. Rather than a gradually shrinking diameter, it has an overall diameter that intermittently expands and contracts. *Figure 12* shows this effect over time.

Figure 12: Supreme Court Network Diameter Over Time



⁶⁶ See Leskovec et al., *supra* note 53, at 2 (“[T]he effective diameter is, in many cases, actually decreasing as the network grows.”). This feature was also observed in scientific and citation networks and the Internet. *Id.* at 5–6.

In contrast to the densification and cluster analyses, this graph does not show such a dramatic effect from the Reagan Revolution on the Court. Average diameter has varied from the low 40s to around 60 over the decades of the Court's history, and this pattern persisted in the Rehnquist Court. The early years of the Rehnquist Court saw a dramatic jump in total network diameter, but more recent years of the Court have witnessed a considerable decline. By this general measure, the effect of the Rehnquist Court on network diameter is ambiguous.

The diameter graph does show a possible effect of the Reagan Revolution on this measure, however, through an alteration and integration process. The beginning of the Rehnquist Court saw an immediate and dramatic increase in network diameter, which lasted for over a decade. Indeed, the court expanded the full diameter of this network to the largest level of the entire era. The latter years of the Rehnquist Court resulted in a dramatic drop in diameter, but this might represent the integration of *its own* decisions into the network. If so, the diameter graph could also reflect an impact of the Reagan Revolution on the Supreme Court.

The above graphs are suggestive of some distinct network changes having occurred with the onset of the Rehnquist Court. However, as simple plots over time, they cannot account for other factors that influenced the network. The apparent associations may be epiphenomenal, or the lack of apparent association with diameter may hide a genuine effect from the Rehnquist Court. To address these possibilities, we move on to statistical analyses that enable the introduction of control variables.

B. Statistical Analyses of the Reagan Revolution

The effect of the Reagan Revolution on the Supreme Court legal network is visually apparent from the above figures. The onset of the Rehnquist Court significantly changed the path of the density and clustering measures. These display only annual differences, though, and do not incorporate other third-factor variables that may have influenced the changes in the network measures, independent of the Reagan Revolution effects. This section assesses the effect of the Rehnquist Court on our network measures, after introducing several variables to control for other effects.

Our first model simply considers the network effect of the Rehnquist Court historically. We include a year variable and capture the effect of the Rehnquist Court as a dummy variable. Because of the innate tendency of networks to

develop over time, there is an autocorrelation concern. To control this effect, we introduced a variable for the score for the prior year for each of the dependent variables. The dependent variables for our analysis are the network-wide effects described above (density, CC1, CC2, and diameter). The form of the regression is:

$$Y_i = \beta_0 + \beta_1(\text{prior year}) + \beta_2(\text{Rehnquist}) + u_i$$

Table 1 displays the results of OLS regression with estimated correlation coefficients and t-values in parentheses.

Table 1: Correlation of Rehnquist Court with Network Measures

	<u>Density</u>	<u>CC1</u>	<u>CC2</u>	<u>Diameter</u>
Constant	-.10* (2.25)	-.01 (-0.10)	.01*** (3.93)	15.74*** (3.50)
prior year	1.02*** (150.25)	1.00*** (51.31)	.92*** (57.89)	.69*** (8.03)
Rehnquist	-.21*** (14.92)	-.01*** (-5.08)	-.01*** (5.26)	.61 (0.60)
Adj. R ²	.99	.98	.99	.47
N	70	70	70	70

The results are roughly as one might expect from the visual depictions, with the Rehnquist Court having a highly statistically significant effect on density and the clustering measures. The prior-year variable shows the natural incremental effect of network changes over time, but it does not eliminate the independent significant effect of the Rehnquist Court. The Rehnquist Court did not appear to significantly determine the extent of network diameter.

To elaborate on the analysis, we produce a more complete model that incorporates additional control variables that could affect our network measure dependent variables. This includes a measure of annual docket size. While the number of petitions for certiorari would itself have no direct effect on network cohesion, it might be a proxy measure for legal uncertainty or complexity that might associate with our network measures. We include a variable for the number of decisions rendered per year. Because each of these decisions represents a new node in the network, the number has a direct influence on network composition. A variable of Supreme Court “institutionalization” is also included. This is a measure meant to capture the Court’s structural standing within the political system, and one might expect such standing to

influence the Court's behavior, including opinion characteristics. Finally, we include a variable that measures the ideological position of the median member of the Court. While there is no necessary reason why conservatism or liberalism would produce more or less network cohesion, it might be that ideology is associated with more activist decisions that by their nature might use less precedent. *Table 2* depicts all the variables in the analysis and the sources of their data.

Table 2

	<u>Independent Variable Descriptions</u>
Prior Year	the measure for each of the dependent variables for the prior year
Rehnquist	a dummy variable coded "1" for the years of the Rehnquist Court
Docket	a continuous variable representing the number of certiorari petitions per year ⁶⁷
Decisions	a continuous variable representing the number of decisions per year ⁶⁸
Institution	a continuous variable created to measure the Supreme Court's institutionalization over time in the political structure ⁶⁹
Median	a continuous variable representing the ideological median vote of the Court by year ⁷⁰

These are not all strictly control variables because they are not exogenous to the Rehnquist Court effect. The number of decisions rendered annually is determined by the Court itself, the ideological median is a distinct feature of the Court, and the Court has some control over its institutionalization. Even the docket may be influenced by the anticipated reactions of the contemporaneous Court. The use of the variables can add information at least about the means that the Court may use to shape the legal network.

⁶⁷ See LEE EPSTEIN ET AL., *THE SUPREME COURT COMPENDIUM* 64–66 (2003).

⁶⁸ See *id.* at 75.

⁶⁹ The scale of institutionalization was created in Kevin T. McGuire, *The Institutionalization of the U.S. Supreme Court*, 12 *POL. ANALYSIS* 128, 133–35 (2004), and based on measures such as the Court's rules, its law clerks, expenditures per justice, judicial experience and other factors. McGuire found this institutionalization to be associated with greater Court power over the long run as measured by its ability to invalidate legislation. See *id.*

⁷⁰ For identification of the annual ideological median voter, we use the calculations of Andrew D. Martin, Kevin M. Quinn & Lee Epstein, *The Median Justices on the United States Supreme Court*, 83 *N.C. L. REV.* 1275, 1296–1300 (2005).

The equation for this test is:

$$Y_i = \beta_0 + 1(\text{year}) + \beta_1(\text{Rehnquist}) + \beta_2(\text{docket}) + \beta_3(\text{decisions}) + \beta_4(\text{institution}) + \beta_5(\text{median}) + u_i$$

Table 3 reports the OLS regression of this broader model on our network measures of interest.

Table 3: Enhanced Correlation of Rehnquist Court with Network Measures

	<u>Density</u>	<u>CC1</u>	<u>CC2</u>	<u>Diameter</u>
constant	.17 (1.21)	.00 (1.79)	.00*** (5.71)	18.93* (2.17)
Prior year	.99 *** (56.62)	.93 *** (18.41)	.80*** (23.61)	.56*** (5.11)
Rehnquist	-.20 *** (-12.12)	-.01*** (5.36)	-.01*** (4.14)	-1.39 (-0.77)
docket	.00 (1.82)	.01** (2.98)	-.01 (1.32)	-.00 (-0.36)
decisions	.00 * (1.85)	.00 (.03)	.06* (2.44)	-.04 (1.48)
institution	-.02 (-0.47)	-.01* (-0.15)	-.00 (-1.64)	7.96 (1.47)
median	.01 (2.38)	-.01 ** (2.07)	.09 (1.11)	.19 (0.18)
Adj. R ²	.99	.95	.99	.47
n	60	60	60	60

The broader model sheds additional light on the effect of the Reagan Revolution as expressed in the Rehnquist Court. The significant negative effect of the Court on three measures of overall network density remains, in the presence of other influential control variables and a model with extremely high goodness of fit. Other control variables showed only occasional effect, as the network dimension was driven by that of the prior year and the Rehnquist Court effect.

Some caution is required in the interpretation of the results. Because the Rehnquist Court is so recent, its density numbers will inevitably be reduced by the lack of opportunity to receive many citations yet. So this negative effect on the network of law may well be overstated. However, the sudden reversal of network density in 1986 and subsequent steady decline cannot simply be explained away by this fact. The Rehnquist Court plainly reduced network density and clustering.

There was no strong Rehnquist Court association with the diameter measures, though there may still be some network effect here. *Figure 12* reveals that the Court initially produced a dramatic increase in network diameter, to historically high levels. The later years, though, saw a dramatic diameter reduction. This may reflect some integration of the Reagan Revolution, perhaps making historic conservative decisions more central to the network than before. Reaching that conclusion requires the next step of examination of individual decisions.

CONCLUSION

Our network measures capture the integration of the Supreme Court's network of precedent, rather than simply the ideological nature of the decisions that a Court rendered. This enables us to measure whether the Rehnquist Court changed the integration of the body of prior decisions rendered by the Court. Mark Tushnet concluded that Justice Rehnquist "presided over courts that changed the law in a very dramatic way."⁷¹ Our research confirms this conclusion.

There appear to be dramatic changes in the network of precedent associated with the Rehnquist Court. While this is consistent with the notion of the Reagan Revolution, breaking down the structure of existing precedent in the Court's opinions and marginalizing contrary precedents, these changes could have another explanation. The Rehnquist Court altered the nature of cases that the Court accepts on certiorari and surely included other changes not measured by our variables. While there is no obvious association between these changes and alterations in the network, they remain a possible explanation of changes in network measures. The choice of opinion assignments theoretically might affect cohesion. Because we measure change over time, there may be other

⁷¹ Charles Lane, *The Rehnquist Legacy: 33 Years Turning Back the Court*, WASH. POST, Sept. 5, 2005, at A08 (quoting Tushnet).

covariates, unforeseen to us, that cause or contribute to our results. Our findings are but the first step of a potentially long path of research that should consider, *inter alia*, the effects of particular decisions, or categories of decisions, and other factors on the determinants of the Supreme Court's network of precedent.

The evidence from the network of Supreme Court decisions reveals a distinct change in the Rehnquist Court era, which is plausibly attributable to the Reagan Revolution. The court disrupted the network of precedents that had built up over decades. From our broader view of the forest, the precise implications of this disruption cannot be determined from these data; that would take a finer-grained analysis that examines the fate of individual cases (trees). The fact that the effect of the Court shows up much more clearly in the network of law than in casual observation of particular decisions suggests that the Court was laying a foundation for long-range change in the law, not trying to remake it overnight. This is consistent with research indicating that the law moves incrementally, via marginal adjustments.⁷² Changing the background legal network may be a predicate for setting the path of law in the future, though the significance of those changes may not be immediately obvious. By this measure, the Reagan Revolution appears to have succeeded.

To have ultimate effect, however, the foundation must be built upon. A detailed study of prison-reform litigation thus found that legal change happened gradually, as precedents slowly and steadily accumulated.⁷³ That study concluded that "doctrine constrains as one element in a dynamic, interacting process; the need to maintain contact with existing doctrine, to stretch it without snapping it, is one of several conditions for effective judicial policy making."⁷⁴ The Rehnquist Court's stretching and restructuring of the preexisting network of precedent may have established the basis for future courts of similar alignment to alter the content of the law to a greater degree than did the Rehnquist Court itself.

⁷² See, e.g., Martin Shapiro, *Stability and Change in Judicial Decision-Making: Incrementalism or Stare Decisis?*, 2 L. TRANSITION Q. 134, 144 (1965).

⁷³ See generally MALCOLM M. FEELEY & EDWARD L. RUBIN, JUDICIAL POLICY MAKING AND THE MODERN STATE: HOW THE COURTS REFORMED AMERICA'S PRISONS (1998).

⁷⁴ See *id.* at 355.

