The Median Justice on the U.S. Supreme Court*

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September 27, 2004

Abstract

Black's "median voter theorem" now figures prominently and crucially into a wide array of research on the U.S. Supreme Court, from studies on the nomination and confirmation of Justices, to investigations into the Court's resolution of disputes, to analyses of its impact on the hierarchy of justice. Nonetheless, and regardless of the substantive focus of the investigation, the question of how to locate the median Justice looms large. Because all extant answers have their share of problems, we set out to develop a more compelling approach—one that relies on methods developed by Martin and Quinn. Via this approach we derive a systematic accounting of the Justice with the highest (posterior) probability of having served as the median for each term since 1937.

In what follows, we (1) introduce the Martin-Quinn method, (2) explain why it represents an improvement over previous efforts, and (3) offer two contemporary applications—both of which assess emerging pieces of wisdom about the Court: that (a) the median Justice (Sandra Day O'Connor) has moved to the "left" or, at least, has grown more moderate in recent terms and (b) the next President will be able to "remake" the Court.

*Prepared for the North Carolina Law Review's symposium on *Locating the Constitutional Center—Centrist Judges and Mainstream Values: A Multidisciplinary Exploration*.

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I Introduction

The "center" of the Court;[1] the Court's "middle;"[2] the "swing" justice;[3] the "pivotal" Justice;[4] and, the most "powerful" Justice.[5] Legal commentators regularly invoke these terms to characterize the Justice who is crucial to the outcome of a case and, thus, to the establishment of public policy. Social scientists,[6] though, tend to use only one: the "median" Justice, that is, the Justice in the

[1]See, e.g., Arnold H. Loewy, *The Positive Reality and Normative Virtues of 'Neutral' Establishment Clause,"* 41 Brandeis L.J. 533 (2003), 541 (noting that "Although we are talking about the center of the Court, the center does seem to take neutrality seriously in regard to deific recognition in schools."); Theodore W. Ruger, et al., *The Supreme Court Forecasting Project.* 104 Colum. L. Rev. 1150 (2004), 1155 (describing their model's success "at predicting the important votes of the moderate justices (Kennedy and O'Connor) at the center of the current Court."); Alan B. Morrison, *The Rehnquist Choice: The Untold Story of the Nixon Appointment That Redefined the Supreme Court,"* 55 Stan. L. Rev. 1457 (2003), 1475 (claiming that "Justice Powell was . . . probably more in the center of the Court on some issues than it is likely that Nixon expected").

[2]See, e.g., Heather K. Gerken, *Elections and Democracy,* 99 Mich. L. Rev. 1298 (2001), 1331 (arguing that in "the context of Shaw . . . [O'Connor is] squarely in the middle of the Rehnquist Court."); Margaret Meriwether Cordray & Richard Cordray, *The Supreme Court's Plenary Docket,* 58 Wash & Lee L. Rev. 737 (2001), 784 (stating that "Justices Blackmun, O'Connor, and Powell (usually in that order) were in the middle of the Court"); Erwin Chemerinsky, *October Term 2002: Value Choices by the Justices, Not Theory, Determine Constitutional Law,* 6 Green Bag 2d 367 (2003), 368 (claiming that " at least until the composition of the Court changes, it is the value choices of the middle of the current Court, Justices O'Connor and Kennedy, that most often determine the results.").

[3]William N. Eskridge, Jr, *Some Effects of Identity-Based Social Movements on Constitutional Law in Twentieth Century,* 100 Mich. L. Rev. 2062 (2002), 2201 (suggesting that "swing justices will see themselves and the Court as exposed to fewer risks of shame or political retaliation if a broad array of interests supports a particular result."); Neal Devins, *Explaining Grutter v. Bollinger,* 152 U. Pa. L. Rev. 347 (2003), 349 (claiming that "Grutter . . . calls attention to how it is that the Supreme Court's identity is typically shaped by the Court's so-called swing justices."); Harold Hongju Koh, *On American Exceptionalism,* 55 Stan. L. Rev. 1479 (2003), 1514 (noting that "As in other areas of Supreme Court jurisprudence, two swing justices—Anthony Kennedy and Sandra Day O'Connor—have not yet firmly committed themselves to one side or another of the debate.).

[4]Michael J. Gerhardt, *The Constitution Outside the Courts,* 51 Drake L. Rev. 775 (2003), 787 (asserting that "It is credible to think that one pivotal Justice, Owen Roberts, was convinced to shift his position on economic due process because of the signals sent by Roosevelt's landslide reelection based in part on his campaign against the Court."); Michael J. Klarman, *Majoritarian Judicial Review: The Entrenchment Problem,* 85 Geo. L.J. 491 (1997) (noting that "When these pivotal Justices [O'Connor and Kennedy] are in their liberal mode, abortion restrictions, school prayer, restrictions on gay rights, exclusion of women from VMI, and limitations on the right to die fall victim to the Court's constitutional axe."); Tracey E. George, *Developing a Positive Theory of Decisionmaking on U.S. Courts of Appeals,* 58 Ohio St. L.J. 1635 (1998), 1663 (writing that "Justice Sandra Day O'Connor has also been considered a pivotal Justice").

[5]See, e.g., Suzanna Sherry, *RFRA-Vote Gambling,* 14 Const. Commentary 27 (1997), 29 (taking note of a "recent game theoretic analysis of Supreme Court voting behavior over the past two terms" showing that Justice Kennedy is the most powerful justice."), Paul H. Edelman & Jim Chen, *"Duel Diligence:" Second Thoughts about the Supremes as the Sultans of Swing,* 70 S. Cal. L. Rev. 219 (1996), 227 (explaining their goal of "trying to identify the Most Powerful Justice by computing the likelihood that a particular Justice will cast the decisive vote over a broad spectrum of Supreme Court controversies.").

[6]This is increasingly so in the law literature as well. See, e.g., Richard L. Revesz, *Congressional Influence on Judicial Behavior?*, 76 N.Y.U.L. Rev. 1100 (2001), 1141 (stating that "In the last quarter century, the shift in the median Justice has been from Justice Powell or Justice Stewart to Justice Kennedy or Justice O'Connor—probably not a very significant difference."); Maxwell L. Stearns, *The Condorcet Jury Theorem and Judicial Decisionmaking: A Reply to Saul Levmore,* 3 Theoretical Inq. L. 125 (2002), 141 (noting that "with the narrowest-grounds rule in place, the median Justice can secure the holding without regard for any strategic accommodation and thus he or she lacks an incentive to move to the right or left of his or her preferred position."); L.A. Powe, Jr., *The Not-So-Brave*

middle of a distribution of Justices, such that (in an ideological distribution, for example,) half the Justices are to the right of (more "conservative" than) the median and half are to the left (more "liberal" than) the median.[7]

Why the idea of a "median" Justice dominates this literature is a hardly a mystery: Since publication of Duncan Black's seminal work[8] we know that, under certain conditions, the outcome of a majority vote will "pull" towards the position favored by the median. That is because, as Black demonstrated, the median voter is essential to secure a majority.[9] In the context of judicial politics, this means that the legal policy desired by the median Justice will (again, under certain conditions and voting procedures) be the choice of the Court's majority and, as such, the median can serve as an appropriate way to characterize the preferences of "the Court" and the outcomes it reaches.[10]

On this much virtually all social scientists—and an increasing number of legal academics—agree; indeed, Black's "median voter theorem" now figures prominently and crucially into a wide array of research on the Court, from studies of the nomination and confirmation of Justices[11] to their interactions with Congress[12] and, of course, to the Court's resolution of disputes.[13] Where disagreement exists, however, is over how to identify the median. In some studies, the authors seem to rely on their own "expert" judgment or intuitions (though perhaps derived from loose analyses);[14] in others, scholars invoke more rigorous approaches, such as the methodical inspection of voting patterns in particular areas of the law.[15]

Because these and other extant methods have their share of problems,[16] we set out to develop a more compelling approach to locate and identify the Court's median—what we call the Martin-

New Constitutional Order, 117 Harv. L. Rev. 647 (2003), 680 (asserting that "After 1962, Brennan was the Warren Court's median Justice; the Rehnquist Court's is either O'Connor or Kennedy. When the median Justice is Rehnquist or Scalia, then talk of revolution will be appropriate."); Mark Tushnet, *Alarmism Versus Moderation in Responding to the Rehnquist Court* 78 Ind. L.J. 47 (2003), 71 (noting that "Under some circumstances, the median Justice might become significantly closer to one of the ideological poles.").

[7]For examples of the use of the median Justice in contemporary studies of the Court, see *supra* note 6 and *infra* notes 11, 12, 13, 15. See also Paul Edelman & Jim Chen, *The Most Dangerous Justice,* 70 So. Cal. L. Rev. 63 (1996) for an effort to distinguish between the median Justice and the "most powerful" or "most dangerous" Justice. But see Lynn A. Baker's response, *Comment: Interdisciplinary Due Diligence: The Case for Common Sense in the Search for the Swing Justice,"* 70 So. Cal. L. Rev. 187 (1996).

[8]Duncan Black, *On the Rationale of Group Decision Making* 56 J. Pol. Econ. 23 (1948); Duncan Black, The Theory of Committees and Elections (1958).

[9]For more on this point, see *infra* Part II.

[10]In *infra* Part II, we say more about why this pull toward the median exists and, thus, why the median can provide an appropriate way to characterize "the Court."

[11]E.g., Byron J. Moraski & Charles R. Shipan, *The Politics of Supreme Court Nominations,* 43 Am. J. Pol. Sci. 1069 (1999); Michael Bailey & Kelly H. Chang, *Comparing Presidents, Senators, and Justice: Interinstitutional Preference Estimation,* 17 J. L. Econ. & Org. 477 (2001).

[12]E.g., William N. Eskridge, Jr., *Reneging on History? Playing the Court/Congress/President Civil Rights Game,* 79 Calif. L. Rev. 613 (1991); Jeffrey A. Segal, *Separation-of-Powers Games in the Positive Theory of Congress and Courts,* 91 Am. Pol. Sci. Rev. 28 (1997)

[13]E.g., Lee Epstein, Jack Knight, & Andrew D. Martin, *Childress Symposium: The Political (Science) Context of Judging,* 47 St. Louis U. L.J. 783 (2003); Paul J. Wahlbeck, *The Life of the Law: Judicial Politics and Legal Change,* 59 J. Politics 778 (1997).

[14]See, e.g., William N. Eskridge, Jr. and John Ferejohn, *The Elastic Commerce Clause,* 47 Vand. L. Rev. 1355 (1994); Eskridge, *supra* note 12; Lee Epstein & Thomas G. Walker, *The Role of the Supreme Court in American Society: Playing the Reconstruction Game,* in Contemplating Courts (Lee Epstein, ed.) (1995).

[15]For a review of these more systematic approaches, see Lee Epstein & Carol Mershon, *Measuring Political Preferences,* 40 Am. J. Pol. Sci. 261 (1996). See also *infra* Part III.

[16]See *infra* Part III.

Quinn approach since it relies on methods developed by these two scholars.[17] From this approach, we now have a systematic accounting of the Justice with the highest (posterior) probability of having served as the median for each term of the Court since 1937.

In Parts IV and V, we introduce the Martin-Quinn approach, explain why it represents an improvement over previous efforts, and offer two contemporary applications—both of which assess emerging pieces of wisdom about the Court: that (1) the median Justice (Sandra Day O'Connor) has moved to the "left" or, at least, has grown more moderate in recent terms and (2) the next President will be able to "remake" the Court. We begin, though, with two introductory notes. In the first (Part II), we consider Black's median voter theorem—the theorem that motivates the use of the median in social science work on the Court. In the second (Part III), we describe previous efforts by scholars of law and courts to identify the median Justice, and explain their relative advantages and drawbacks.

II The Median Voter Theorem and Its Application to the Supreme Court

In the contemporary study of judicial politics, it is difficult to identify research that does *not* represent the Court on the basis of the preferences of the "median Justice" or otherwise make use of that concept.[18] This is as true of work on the appointment of Supreme Court Justices, which suggests that both the President and the Senate are attentive to the location of the Court's median when they make their choices,[19] as it is of studies of the Court's interactions with Congress[20] and with the federal appellate courts,[21] which typically equate the preferences of the Court with that of its median member. It also holds for research that seeks to unearth explanations for the development of particular norms (such as the Rule of Four[22]), as well for formal doctrinal analyses.[23]

That the median plays such a crucial role in the modern study of law and politics is a tribute to Duncan Black's work. In a now-landmark series of studies,[24] Black demonstrated that, under certain conditions, the policy desired by the median will be the choice of the majority. Specifically, by his median voter theorem, if voters (1) have single-peaked preferences (2) in a single-dimensional issue space,[25] then the position of the median will prevail under majority rule and various voting

[17] See *infra* Part IV. For a technical description of their general project on ideal point estimation—which employs Markov chain Monte Carlo methods to fit Bayesian models—see Andrew D. Martin and Kevin M. Quinn, *Dynamic Ideal Point Estimation via Markov Chain Monte Carlo for the U.S. Supreme Court, 1953-1999,* 10 Pol. Analysis 134 (2002).

[18] In light of the theme of this symposium, we focus exclusively on the Supreme Court of the United States but studies of other tribunals, both here and abroad, also invoke the logic of the median voter theorem. See, e.g., Robert M. Howard and David C. Nixon, *Local Control of the Bureaucracy: Federal Appeals Courts, Ideology, and the Internal Revenue Service,* 13 Wash. U. J.L. & Pol'y 233 (2002); Lori Hausegger and Stacia Haynie, *Judicial Decisionmaking and the Use of Panels in the Canadian Supreme Court and the South African Appellate Division,* 37 Law & Soc'y Rev. 635 (2003), at 655; Eli Salzberger and Paul Fenn, *Judicial Independence: Some Evidence from the English Court of Appeal,* 42 J. Law & Econ. 831 (1999), at 843.

[19] See, e.g., Moraski & Shipan, *supra* note 11.

[20] E.g., Eskridge, *supra* note 12.

[21] E.g., Frank B. Cross, *Decisionmaking in the U.S. Circuit Courts of Appeals*, 91 Calif. L. Rev. 1457 (2003) at 1510-1511; Joseph L. Smith and Emerson H. Tiller, *The Strategy of Judging: Evidence from Administrative Law,* 31 J. Legal Stud. 61 (2002), at note 36.

[22] Jeffrey R. Lax, *Certiorari and Compliance in the Judicial Hierarchy* 15 J. Theoretical Pol. 61 (2003).

[23] E.g., Linda R. Cohen and Matthew L. Spitzer, *Judicial Deference to Agency Action*, 69 S. Cal. L. Rev. 431 (1996), at 446-447; Lee Epstein and Jack Knight, The Choices Justices Make (1998).

[24] Black, *supra* note 8.

[25] Nearly all statistical work on the U.S. Supreme Court suggests that the issue space is single-dimensional. See,

procedures.[26]

Let us unpack these ideas with reference to Figure 1, which illustrates the preferences of three Justices (but which generalizes to a Court of nine) over a specific policy matter: the standard (or test) to apply in constitutional sex discrimination cases (but which could be virtually any particular policy area). Notice that the issue space conforms to one condition of the median voter theorem: it is a single line—a continuum, really, with policy positions on the left (more "liberal") representing higher barriers that the government must overcome to defend its sex-based classifications and those on the right (more "conservative"), representing lower barriers.[27] Note too that the Justices' preferences conform to the single-peakedness condition: Each has a maximum at some point on the line—their "most preferred position" or "ideal point"—and "slopes" away from that maximum on either side. For example, in the case of Justice 2, her most preferred position, as indicated by the top of her curve, is the rather centrist position (at least here) of skeptical scrutiny; her preferences decline for alternatives to her left (strict scrutiny) and to her right (heightened scrutiny).[28]

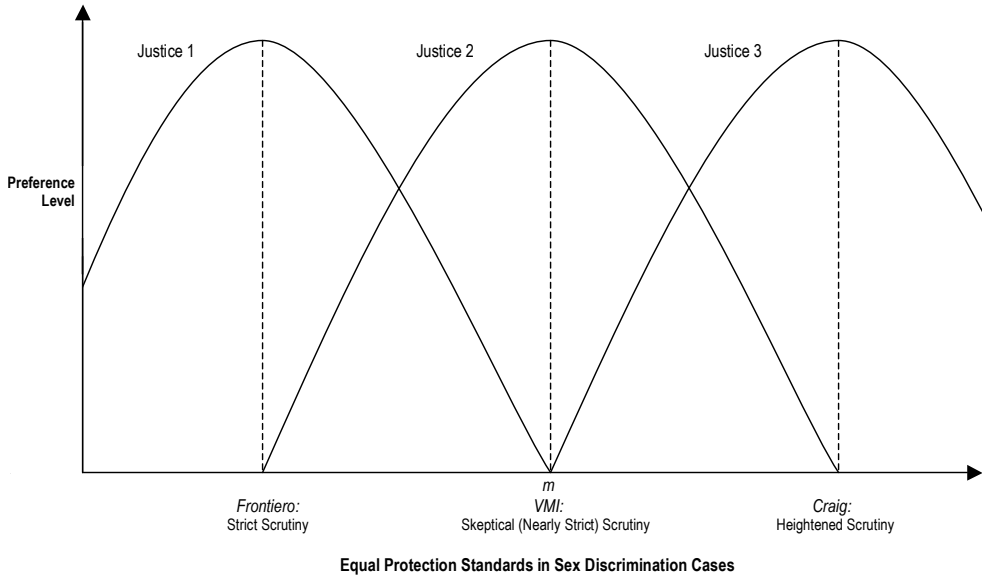


Figure 1: The median voter prevails in the decision over the standard to apply in constitutional sex discrimination cases.[29]

e.g., Bernard Grofman and Timothy Brazill, *Identifying the Median Justice on the Supreme Court through Multidimensional Scaling: Analysis of 'Natural Courts' 1953-1991*, 112 Public Choice 55 (2002).

[26]For accessible expositions of the theorem, see Kenneth A. Shepsle & Mark S. Bonchek, Analyzing Politics (1997), 84; Shaun Hargreaves Heap et al.,The Theory of Choice (1992), 219-222; Dennis C. Mueller, Public Choice II (1989), 65-66; Roger D. Congleton, *The Median Voter Model,* in The Encyclopedia of Public Choice (ed. by C. K. Rowley and F. Schneider) (2003). Our discussion here derives from these sources, as well as from Epstein & Knight, *supra* note 23 and Epstein, Knight, & Martin, *supra* note 13.

[27]We identify just three possibilities: strict scrutiny, skeptical scrutiny, and heightened scrutiny. But others, both to the right of heightened and the left of strict, exist. See Lee Epstein, Andrew Martin, & Lisa Baldez, *Do We Still Need an ERA?* (2004) (available at: http://epstein.wustl.edu/research/ERA.html).

[28]The condition of single-peakedness would be violated if a Justice was an "extremist" in the sense that she preferred either a low level of scrutiny or a high level of scrutiny to the more centrist skeptical scrutiny.

[29]In Frontiero v. Richardson, 411 U.S. 677 (1973), a plurality of the Court concluded "that classifications based upon sex, like classifications based on race ... are inherently suspect, and must therefore be subjected to strict judicial scrutiny." In Craig v. Boren, 429 U.S. 190 (1976), the Court articulated the heightened scrutiny standard:

In this depiction, Justice 2 is also the median voter: the same number of Justices prefer a lower standard than Justice 2 as prefer a higher standard than Justice 2 (one each).[30] And, as such, the median voter theorem tells us that the point corresponding to Justice 2's most preferred position (or ideal point)—skeptical scrutiny—will prevail in a majority vote; that point is an "equilibrium," meaning here that it will defeat any other point under a majority voting regime.[31]

Why? If we assume single-peakedness, Justices 2 and 3 always will oppose any standard to left of skeptical scrutiny and Justices 1 and 2 always will oppose any standard to the right of skeptical scrutiny. So, for example, suppose the choice is between the alternatives of *strict* versus *skeptical* scrutiny:

> Justice 1 votes for *strict*; Justice 2 votes for *skeptical*, as does Justice 3—with *skeptical* a 2-1 vote winner.

If the alternatives are *skeptical* versus *heightened* scrutiny, then *skeptical* again prevails:

> Justice 1 votes for *skeptical* as does Justice 2, while Justice 3 selects *heightened* scrutiny.

Notice that in the first instance, the outcome represents a defeat for Justice 1 and, in the second, Justice 3 fails but that in both Justice 2 is on the winning side.[32]

"To withstand constitutional challenge, ... classifications by gender must serve important governmental objectives and must be substantially related to achievement of those objectives." Finally, in United States v. Virginia (the "VMI case"), 518 U.S. 515, 531 (1996), Justice Ginsburg, writing for the majority, attempted to "ratchet up" *Craig,* stating that "Parties who seek to defend gender-based government action must demonstrate an 'exceedingly persuasive justification' for that action. Today's skeptical scrutiny of official action denying rights or opportunities based on sex responds to volumes of history." Some trace Ginsburg's language in VMI back to Mississippi University for Women v. Hogan, 458 U.S. 718, at 724 (1982) and J.E.B. v. Alabama ex rel. T.B., 511 U.S. 127, at 136-37 (1994). See, e.g., Peter S. Smith, *The Demise of Three-Tier Review,* 23 J. Contemp. L. 475 (1997) (asserting that "in recent gender discrimination challenges, the Court has applied a super-heightened scrutiny to equal protection challenges. The language for this redefinition of intermediate review derives from Hogan [requiring that gender-based governmental action demonstrate an 'exceedingly persuasive justification']. See also J.E.B. v. Alabama ex rel. T.B.").

For more on Ginsburg's opinion in VMI, see Michael C. Dorf, *The Paths to Legal Equality,* 90 Cal. L. Rev. 791 (2002) (claiming that "United States v. Virginia arguably ratcheted up the level of judicial scrutiny applicable to sex classifications from intermediate to nearly strict"); Martha Craig Daughtrey, *Women and the Constitution*, 75 N.Y.U. L. Rev. 1 (2000), at 21 (suggesting that in the VMI case, "Justice Ginsburg ratcheted up the already 'heightened scrutiny' another notch or two."); but also note that scholars now point out that the Court has retreated from the VMI standard; e.g., Dorf (suggesting that while "United States v. Virginia arguably ratcheted up the level of judicial scrutiny ... Nguyen [v. INS, 533 U.S. 53 (2001)] ... ratcheted it back down.").

[30] We adapt this example from Congleton, *supra* note 26 and Keith Krehbiel, *Spatial Models of Legislative Choice,* 13 Legis. Stud. Q. 259 (1988).

[31] The median need not be unique. Indeed, with an even number of Justices, the median is actually the range of points between the two most central Justices. This is because any of these points constitutes an equilibrium.

[32] We also should note that the median need not be located exactly between the highest standard and the lowest. As Heap et al., *supra* note 26, 221, note: "The median is identified with reference to the relation between between his or her preferences and the preferences of all other voters, and not by reference to the underlying terms in which the ideological space is defined." What this means is that if the Court is rather conservative (such that some Justices prefer a rational basis standard, which would be to the right of intermediate scrutiny) then the median might prefer heightened scrutiny.

III Existing Methods for Identifying the Median Justice

From even this brief discussion, it is easy to see why virtually all contemporary literature on judging relies so heavily on the concept of the median. If we believe, as so many scholars do,[33] that preferences—particularly policy preferences—play a crucial role in explaining the choices the Court makes, then we require a method to account for those preferences. Enter the median voter theorem: If it holds for the Court,[34] then it suggests that the preferences of median Justice ought provide a meaningful representation of the preferences of "the Court."

At the very least, this is how judicial specialists have made use of the theorem's logic. Illustrative is recent research by Epstein et al., which sought to determine whether the U.S. Supreme Court curtails rights and liberties during wars and other threats to the nation's security.[35] Conducting the investigation required the researchers to take into account whether an international crisis was ongoing when the Court made its decision; that was the variable of primary interest. But, in light of a vast social science literature indicating the existence of a political component to judging—such that liberal Justices, regardless of a war, are more likely to support litigants alleging a violation of their rights by the government and conservatives Justices, more likely to support the government—Epstein and her colleagues also needed to attend to the political preferences of "the Court" over matters of rights and liberties.[36] To do so, they included a variable called "the Court," but which was, in fact, the political preferences of the median Justice.

The task confronting Epstein et al.—not to mention virtually all researchers investigating judicial decision making—was how to locate the median's ideal point. To accomplish it, she and her colleagues relied on *expert judgments*. But two other methods were possible: the use of *party affiliations* and *votes*. In what follows we consider all three.

A Party Affiliations

The use of political party to identify the median Justice comes in many variants. Some analysts rely primarily on the party of the Justice, others on the party of the appointing President or Senate, and still a third group on a combination of two or more of these factors. Spitzer and Cohen's work exemplies the latter.[37] To locate the policy preferences of the Court's median, they assigned a

[33]Epstein & Knight, *supra* note 23; Jeffrey A. Segal & Harold J. Spaeth, The Supreme Court and the Attitudinal Model Revisited (2002); Ruger, et al., *supra* note 1.

[34]Some law scholars have taken issue with the conditions of Black's theorem. Edelman & Chen, *supra* note 5 at 231, for example, assert that "it verges on the unsporting to name a multidimensional controversy," (though they name one); see also Evan H. Caminker, *Sincere and Strategic Voting Norms on Multimember Courts,* 97 Mich. L. Rev. 2297 (1999), at 2320 (writing that "It is frequently assumed that ... the majority will converge in a moderate or median position. This may well be quite likely when the Justices' ideal points can be lined up nicely in a single-peaked fashion along a single dimension, for in stance from liberal to conservative. ... But sometimes the options under discussion cannot easily be aligned along a single dimension.") We too can identify particular cases that violate the condition of a single-dimension issue space but, as it turns out, the great majority of disputes before the Supreme Court do not. E.g., of the 8,889 cases in which the Court heard oral arguments and decided between the 1953 and 2002 terms, only 3.79 percent (n=337) contained more than one issue (e.g., a case that raised questions about federal taxation and federalism). Computed from from Harold J. Spaeth's U.S. Supreme Court Database (May 17, 2004 release) (available at: http://www.as.uky.edu/polisci/ulmerproject/UlmerProject/index.htm) (last accessed on June 17, 2004), using: analu=4; dec_type=1,6, or 7. See also Grofman & Brazill, *supra* note 25.

[35]Lee Epstein, et al., *The Effect of War on the U.S. Supreme Court,* N.Y.U.L. Rev. (2005), forthcoming (available at: http://epstein.wustl.edu/research/war.html).

[36]This literature is indeed vast. For the canonical example, see Segal & Spaeth, *supra* note 33.

[37]Spitzer & Cohen, *supra* note 23.

score (ranging from 0 to 1, with 1 being the most conservative) to each Justice serving between 1977 and 1992 based on the political party of the appointing Senate and President.[38] We display the results of their calculations for the 1977 term in Table 1 but the year we selected matters not: The median was a relatively conservative .70 for all the years in their study.[39]

Justice	**Spitzer-Cohen Score for 1977**	**Actual Liberal Voting in 1977**
Blackmun	.70*	.52
Brennan	.70*	.79
Burger	.70*	.36
Marshall	.00	.80
Powell	.70*	.47
Rehnquist	.70*	.19
Stewart	.70*	.55
Stevens	.70*	.53*
White	.00	.53*

Table 1: Using party affiliation to identify the location of the median Justice, 1977. An * indicates the median Justice in 1977. The Spitzer-Cohen column shows the Spitzer-Cohen political preference score, which is based on the party affiliation of the appointing President and Senate. The Actual Liberal Voting column shows the proportion of liberal votes cast in in 1977 in civil liberties cases.[40]

The relative ease of developing a Spitzer & Cohen-type approach makes it attractive: data on the party affiliations of Justices, Presidents, and Senates are available from any number of sources.[41] But its downsides are considerable. First, as Spitzer and Cohen themselves recognize, ideological "mistakes" abound.[42] That is because the appointing President, Senate, or both can and do make them; Eisenhower admitted as much about two of his nominees, Brennan and Warren, who—much to his chagrin—turned out to be a good deal more liberal than he anticipated.[43]

Surely, this problem afflicts the Spitzer-Cohen method, which classifies both Brennan and Rehnquist as medians when, based on their actual voting records, they are the maximums and minimums (or nearly so) (see the third column in Table 1). But a second, albeit related, downside may be even more serious: The Spitzer-Cohen measure assumes that all Democrats are equivalently liberal and all Republicans are equivalently conservative when plainly this is not always the case. "Presidents

[38]Their score gives greater weight to the President when the Senate is of the opposing political party. For more details, see Spitzer & Cohen, *supra* note 23, 445-446.

[39]As they explain it, "The median is .7 [for 1977]. In 1981 O'Connor (with a value of 1.0) replaced Stewart, making the median .7 .... In 1986 Scalia (1.0) replaced Burger, leaving the median at .7 .... In 1988 Kennedy (.7) replaced Powell, leaving the median ... unchanged. In 1990 Souter (.7) replaced Brennan, leaving the median ... unchanged." Spitzer & Cohen, *supra* note 23, 445-446.

[40]The Spitzer & Cohen scores are from Spitzer & Cohen, *supra* note 23, 445-446. The proportion of liberal votes cast are from Lee Epstein, et al. The Supreme Court Compendium (2003), Table 6-3.

[41]For an electronic, analyzable source that contains information about the party and ideology of Justices, Presidents, and Senators, see the U.S. Supreme Court Justices Database (available at: http://epstein.wustl.edu/research/justicesdata.html.

[42]Spitzer & Cohen, *supra* note 23, 445-446.

[43]Specifically, when asked if he made any mistakes as President, President Eisenhower replied "[y]es, two, and they are both sitting on the Supreme Court." See Laurence H. Tribe, God Save This Honorable Court (1985), 51.

of the same political party," as Giles and his colleagues write, "vary in their ideological preferences. Eisenhower is not Reagan."[44] Nor, might we add, is Senator Ted Kennedy the ideological equivalent of Senator Joe Lieberman even though they are both Democrats; and Justice Stevens is not Chief Justice Rehnquist even though they are both Republicans.

Because party-based approaches to the median can miss these in-group distinctions, they are prone to errors. On most, for example, the median would not have budged when the Nixon appointee, Warren Burger, replaced the Eisenhower appointee, Earl Warren: both Presidents were Republicans, as were their appointees. Based on the observed proportion of liberal votes cast, however, the location of the median did, in fact, change: in the area of civil liberties, for example, it moved considerably— from a liberal score of .771 (Fortas) to .504 (White/Black).[45]

Of course this decrease in liberalism would hardly surprise students of politics: by most measures, Nixon was more conservative than Eisenhower[46] and Burger, more conservative than Warren.[47] But it is not an alteration that a blunt indicator, such as party affiliation, is particularly able to detect.

B "Expert Judgments": The Segal-Cover Scores

The use of expert judgments to identify the median Justice is a relatively new approach. It was developed by political scientists Jeffrey A. Segal and Albert D. Cover who analyzed the content of newspaper editorials written between the time of a Justice's nomination to the Court and confirmation to the bench.[48] Segal and Cover then translated their "expert judgments" (i.e., newspaper editors' assessments) into ideological values or scores, which range from -1 (unanimously conservative) to 0 (moderate) to +1 (unanimously liberal).[49] In Figure 2 we display these "Segal-Cover"

[44]Micheal W. Giles, Virginia A. Hettinger, & Todd Peppers, *Picking Federal Judges,* 54 Pol. Research Q. 623, 624 (2001). They continue: "Indeed, the empirical record demonstrates that the voting propensities of some Democratic and Republican Presidents do not differ significantly."

[45]See also *infra* Table 4, showing that the median moved from Thurgood Marshall (a very liberal -0.781) in the 1968 term to Hugo Black (0.187) in 1969.

[46]See, e.g., Keith Poole's Nominate data (Common Space Coordinates for U.S. Presidents), reporting a score of .169 for Eisenhower and .369 for Nixon (higher scores are more conservative). Data are available at: http://voteview.uh.edu/default_nomdata.htm (last accessed on June 25, 2004).

[47]For example, 78.6 percent of Warren's 771 votes in civil liberties cases were in the liberal direction; that figure for Burger is 29.6 (N=1,429). Data are from Epstein, et al., *supra* note 40, Table 6-2. See also *infra* Figure 2.

[48]Jeffrey A. Segal and Albert D. Cover, *Ideological Values and Votes of Supreme Court Justices,* 83 Am. Pol. Sci. Rev. 557. Segal and Cover made use of editorials in four of the nation's leading newspapers, two with a liberal outlook (the *New York Times* and the *Washington Post*) and two on the more conservative end (the *Chicago Tribune* and the *Los Angeles Times*). Jeffrey A. Segal, et al. *Ideological Values and the Votes of U.S. Supreme Court Justices Revisited,* 57 J. Politics 812 (1995), updated the Segal & Cover scores to cover the four most recent nominees (Souter, Thomas, Ginsburg, and Breyer) and backdated the scores to include Justices appointed since 1937 (Hugo Black).

[49]As Segal & Cover explain their procedures:

> We trained three students to code each paragraph [in the editorial] for political ideology. Paragraphs were coded as liberal, moderate, conservative, or not applicable. Liberal statements include (but are not limited to) those ascribing support for the rights of defendants in criminal cases, women and racial minorities in equality cases, and the individual against the government in privacy and First Amendment cases. Conservative statements are those with an opposite direction. Moderate statements include those explicitly ascribe moderation to the nominees or those that ascribe both liberal and conservative values.

Segal & Cover, *supra* note 48, at 559. They arrived at their measure by subtracting the fraction of paragraphs coded conservative from the fraction of paragraphs coded liberal and dividing by the total number of paragraphs coded liberal, conservative, and moderate.

scores for each Justice appointed since 1937;[50] and in Figure 3 we depict the scores of utmost concern here: those for the median Justice for the 1946 through 2003 terms.[51]

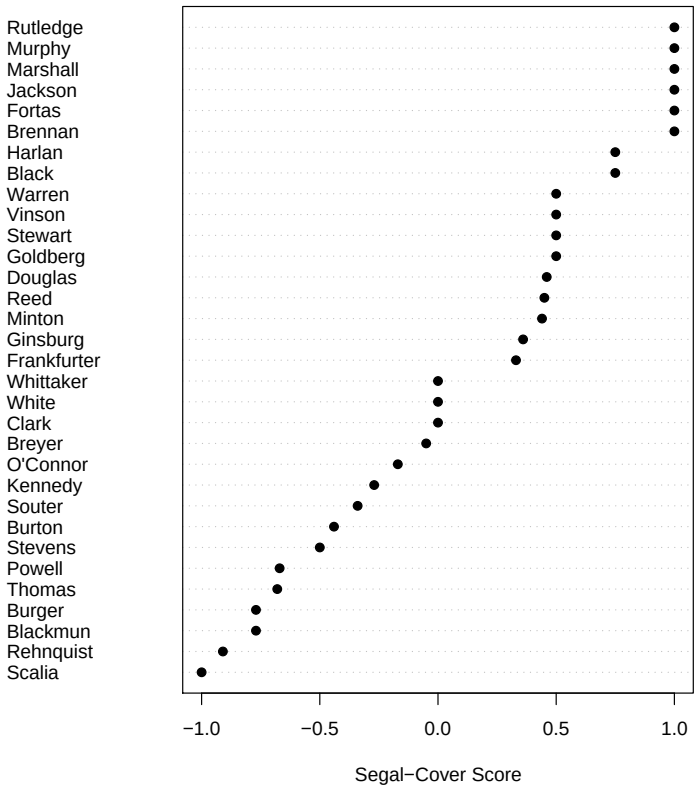


Figure 2: The Segal-Cover scores for Justices appointed since 1937 (Hugo L. Black through Stephen G. Breyer), The scores range from -1.00 (most conservative) to 1.00 (most liberal).[52]

[50]For a complete list of the Segal and Cover scores, see Epstein et al., *supra* note 40, Table 6-1.

[51]We begin with the 1946 term because that it is the first one for which Segal-Cover scores are available for all sitting Justices.

[52]The Segal & Cover scores are available in Epstein et al., *supra* note 40, Table 6-1.

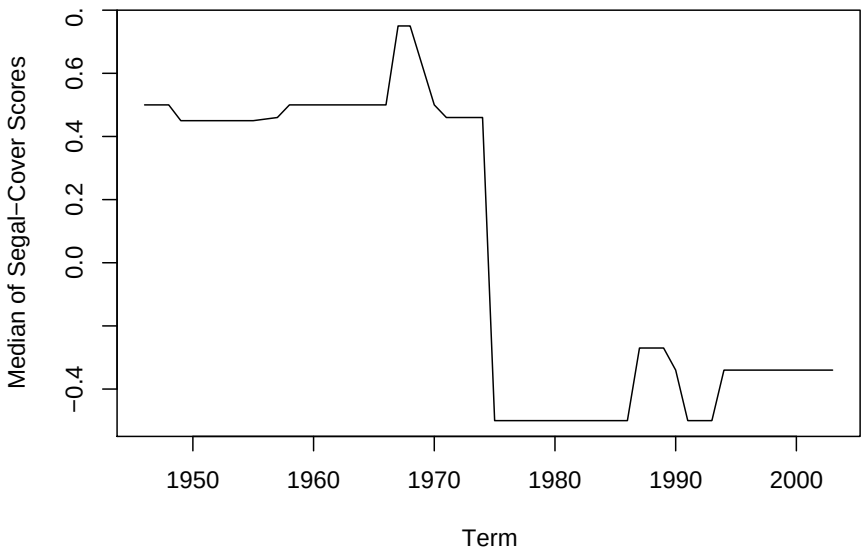


Figure 3: The median of the Segal-Cover scores, 1946-2003 terms. The line depicts the Segal-Cover score of the median Justice for each term. The scores range from -1.00 (most conservative) to 1.00 (most liberal).[53]

From these illustrations, we can see why many scholars employ these scores: To the extent that they are well in line with commonly held intuitions about particular Justices and Court eras, they appear facially valid. For example, Brennan and Marshall, generally regarded as liberals, receive scores of 1.00; Scalia and Rehnquist, generally regarded as conservatives, receive scores of -1.00 and -0.91, respectively. The median Justice data also comport with scholarly impressions of particular Court eras: Note the high level of liberalism during the Warren Court years (1953-1968 terms) and the decrease that occurs thereafter as more and more Justices appointed by conservative Presidents Richard M. Nixon, Ronald Reagan, and George H.W. Bush ascended to the bench.[54]

The assets of the Segal-Cover scores do not stop here. Yet another—and one that provides their clear competitive advantage—is this: Because Segal and Cover generated them from an inspection of newspaper editorials *prior* to the Justices' confirmation, and not from decisions rendered upon their ascension to the bench, the scores are exogenous to the judicial vote. This means that scholars can employ them as a measure of the median Justice's preferences in their studies without running the risk of circularity (i.e., using votes [to locate the median] to predict votes). Of course, invoking the scores in this way would not be particularly beneficial if they failed miserably at explaining judicial output but that is not the case: statistical analyses demonstrate they are acceptable predictors of votes in many (but not all[55]) areas of the law, for many Justices; they also are able to capture the median voter in many (though again not all) terms, which in turn, can supply a (relatively) useful predictor of Court outcomes.[56]

These advantages—and they are considerable—explain why Epstein and her colleagues, in their

[53]The median of the Segal-Cover scores for each term is available in Epstein, et al. *supra* note 40, Table 3-12.

[54]For ideological characterizations of particular Court eras, see, e.g., Thomas W. Merrill, *Childress Lecture: The Making of the Second Rehnquist Court: A Preliminary Analysis*, 47 St. Louis U. L.J. 569 (2003); Howard Gillman, The Votes that Counted (2001); William N. Eskridge, Jr., *Overriding Supreme Court Statutory Interpretation Decisions*, 101 Yale L. J. 331 (1991).

[55]We return to this point momentarily.

[56]For example, a simple bivariate regression of the percentage of civil liberties cases decided in the liberal direction and the median of the Segal & Cover scores produces the following.

research on the effect of war on judicial decisions relied on the Segal-Cover scores and not party affiliation, to identify the ideal point of "the Court" (i.e., the median Justice).[57] Unfortunately, disadvantages exist as well. One is that while the Segal-Cover scores provide a reasonable measure of the median for research focusing on civil liberties (e.g., the Epstein war study),[58] they hold little explanatory power for analyses of litigation involving unions, federalism, and taxation—or about 15 percent of the Court's plenary docket.[59] This is hardly a surprise since Segal and Cover, recall, developed their measure from newspaper editorial writers—a group of "experts" who may very well be inclined to evaluate a judicial candidate's ideological leaning on the basis of a few "splashy" civil liberties issues rather than on the range of issues potentially facing the new Justice. But it is a real disadvantage for research requiring a measure of the median in the range of disputes before the Court.

A second drawback is that we cannot, from the Segal-Cover scores (or, for that matter, party affiliation) quantify the degree of uncertainty about the location of the median. In other words, Segal and Cover treat the median as unambiguously "the median" even though we have an intuition that this is not always the case. Indeed, without O'Connor's presence on the Court today, we doubt that this Symposium, specifically on the Court's "center," would have the cachet that it does: On virtually all conceptual and empirical definitions, O'Connor is the Court's center—the median, the key, the critical, and the swing Justice.[60] But would we say the same about Thurgood Marshall in 1968, Harry Blackmun in the late 1970s, and David Souter in the early 1990s? Each was, in fact, the Court's median but none was as unambiguously so as O'Connor.[61] The ability to quantify this degree of ambiguousness—in the form of a probability—is thus a crucial task but one that neither the Segal-Cover scores nor approaches based on party affiliation are capable of assuming.

C Votes

There is yet one other method for identifying the Court's median, and it may be the most common: analyses of votes cast by the Justices.[62] One reason for the appeal of this approach is that it is relatively easy to deploy. All the researcher needs do is select an area of the law—say, criminal procedure or an even finer one, such as Fourth Amendment search and seizure cases—

Variable	**Coefficient**	**(Std. Err.)**
Median of the Segal-Cover Score	18.817**	(3.044)
Intercept	49.917**	(1.436)
N	56	
R^2	0.414	
$F_{(1,54)}$	38.221	

The median of the Segal-Cover scores are available in Epstein et al., *supra* note 40, Table 3-12; data on civil liberties cases is in Epstein et al., *supra* note 40, Table 3-8.

[57]Epstein, et al., *supra* note 35.

[58]See *supra* note 56.

[59]See Epstein and Mershon, *supra* note 15, 278. For data on the Court's plenary docket, see Epstein, et al., *supra* note 40, Table 2-11.

[60]See, e.g., *infra* note 80. Interestingly, an exception here is the Segal-Cover approach, which categorizes Souter, not O'Connor, as the median.

[61]See *infra* Figure 5.

[62]More accurately, vote analysis encompasses diverse sets of methods, from the simple counting of "liberal" and "conservative" votes in various issue areas to sophisticated latent variable models. Compare Harold J. Spaeth, *The Attitudinal Model,* in Contemplating Courts, (ed. Lee Epstein) (1995) and Martin and Quinn *supra* note 17. For a review of literature relying on some of these methods, see Epstein & Mershon *supra* note 15.

and inspect the behavior of individual Justices in a given term(s), term t, with an eye toward characterizing the median in that term or in a subsequent one, term $t+1$.

That inspection could take several forms; here, we emphasize two. In the first, illustrated in Figure 4 (the PV[term] line), we (1) examine the percentage of votes cast by the Justices in favor of criminal defendants (that is, the percentage of "liberal" votes) in three terms (1961, 1981, 2001) and then (2) array the Justices on the single issue dimension of criminal procedure, which ranges from most favorable to defendants (most liberal) to least favorable (most conservative). The Justice in the middle is the median for that term (e.g., Justice White in the 1981 term).

[63] We derived these data from Harold J. Spaeth's U.S. Supreme Court Database (May 17, 2004 release) (available at: http://www.as.uky.edu/polisci/ulmerproject/UlmerProject/index.htm) (last accessed on June 17, 2004), using: analu=0 or 4; dec_type=1,6, or 7; value=1.

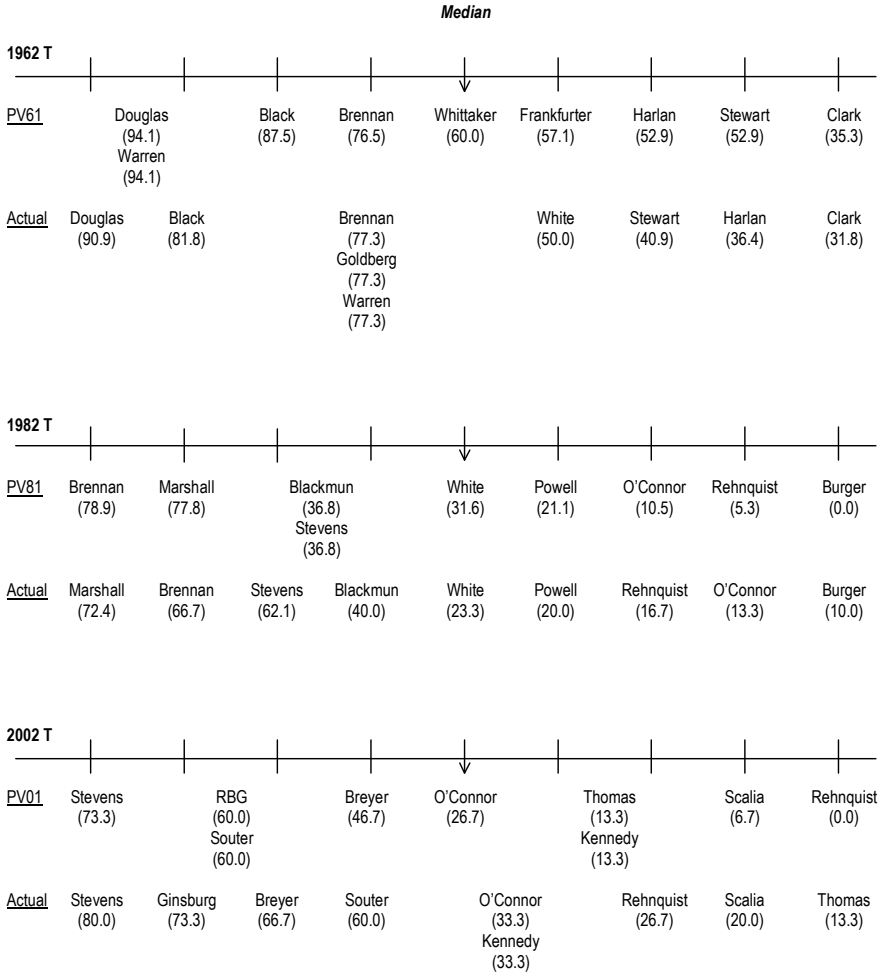


Figure 4: The median Justice in criminal procedure cases, 1962, 1983, and 2002 terms. The figure in parenthesis under the Justice's name is the percentage of votes cast in favor of the defendant (liberal votes). The PV[term] line arrays the Justices based on their percent liberal voting in criminal procedure cases in the prior term. E.g., for the 1962 term, the PV61 line shows the Justices arrayed based on their voting in the 1961 term, such that Clark cast 35.3 percent of his votes in favor of defendants, Stewart, 52.9 percent, and so on. The Actual line arrays Justices based based on their percent liberal voting in criminal procedure in that term. E.g., for the 1962 term, the Actual line shows the Justices arrayed based on their voting in the 1962 term. Note that Whittaker departed from the Court (and White arrived) before the end of the 1961 term, and that Frankfurter participated in only 7 of the 17 criminal procedure cases decided during that term. We include them here for purposes of discussion.[63]

In the second example, shown in Table 2, we reproduce Segal's cumulative scale of Fourth Amendment search and seizure cases resolved by the Justices between the 1975 and 1980 terms (a period of stability in the Court's membership).[64] From even a visual inspection of this scale—which is simply an ordering of cases based on the number of "+" votes (those cast in support of the defendant) and of the Justices based on the number of "+" votes they cast—we could reach a number of conclusions but only one is relevant here: Justice White once again emerges as the median. He sits in the middle of the array across the top; we also can observe that (with a few "errors" here and there) the cases tend to break around him: when he votes in favor of the defendant, the outcomes tends to favor the defendant and when he votes against the defendant, the outcomes tend to go against the defendant. Finally, as Segal explains, "of the 37 cases scaled in [the figure] ... White provided the minimum winning vote 24 times, with Stevens following at five and one-half."[65]

[64] Jeffrey A. Segal, *Supreme Court Justices as Human Decision Makers,* 48 J. Pol. 938, at 943.
[65] Segal, *supra* note 64, 943.

Marshall	Brennan	Stevens	Stewart	White	Powell	Blackmun	Burger	Rehnquist	Total
+	+	+	+	+	+	+	+	-	8-1
+	+	+	+	+	+	+	+	-	8-1
+	+	+	+	+	NP	+	+	-	7-1
+	+	+	+	+	+	+	-	-	7-2
+	+	+	+	+	+	+	-	-	7-2
+	+	+	+	+	+	-	+	-	7-2
+	+	+	+	-	+	+	+	-	7-2
+	+	+	+	+	+	-	-	-	6-3
+	+	+	+	-	+	-	+	-	6-3
+	+	-	+	+	+	-	-	-	6-3
+	NP	-	+	+	+	+	-	-	5-3
+	+	+	+	+	-	-	-	-	5-4
+	+	+	+	-	-	-	-	-	4-5
+	+	+	+	-	-	-	-	-	4-5
+	+	+	-	+	-	-	-	-	4-5
+	+	+	-	+	-	-	-	-	4-5
+	+	-	+	+	-	-	-	-	4-5
+	+	+	-	-	+	-	-	-	4-5
+	+	-	+	-	NP	-	-	-	3-5
+	+	NP	+	-	-	-	-	-	3-5
+	NP	+	+	-	-	-	-	-	3-5
+	+	+	-	-	-	-	-	-	3-6
+	+	+	-	-	-	-	-	-	3-6
+	+	+	-	-	-	-	-	-	3-6
+	+	+	-	-	-	-	-	-	3-6
+	+	-	+	-	-	-	-	-	3-6
+	+	-	-	+	-	-	-	-	3-6
+	+	-	NP	NP	-	-	-	-	2-5
+	NP	-	-	+	-	-	-	-	2-6
+	+	-	-	-	-	-	-	-	2-7
+	+	-	-	-	-	-	-	-	2-7
+	+	-	-	-	-	-	-	-	2-7
+	+	-	-	-	-	-	-	-	2-7
+	+	-	-	-	-	-	-	-	2-7
+	+	-	-	-	-	-	-	-	2-7
-	-	-	+	-	-	-	-	-	1-8

Table 2: Cumulative scale of non-unanimous search and seizure decisions, 1975-1980 terms. A "+" indicates a vote in favor the defendant (the search was unreasonable); a "-" indicates a vote against the government (the search was reasonable); and a "NP" indicates that the Justice did not participate in the case.[66]

Segal's examination of voting patterns, not to mention ours in Figure 4, shores up the advantages of this approach: it is, as we noted earlier, relatively straightforward to deploy and capable of unearthing the median for a given term(s). Moreover, it can provide valuable fodder for research, as the Segal study itself demonstrates. After identifying White as the median voter in search and seizure cases, Segal explored possible explanations for the decisions of this key Justice. From this analysis we learn, among other lessons, that White treated "searches involving the United States more leniently than cases involving the various states. A state searching having a 52% chance of being upheld by White would have a probability of .74 of being upheld if were a federal search."[67]

On the other hand, invoking votes to locate the median is hardly without drawbacks. Primarily,

[66]This scale is from Segal, *supra* note 64, 943.

[67]Segal, *supra* note 64, at 946.

while we have no qualms with the Segal study, we and most other social scientists would certainly take issue with research that invoked the median (to represent "Court") in term t to explain Court decisions in term t: that would amount to using votes to predict votes.[68]

And therein lies the rub: if we cannot employ votes in this way, then they are of little value for many research projects—actually, for any project that seeks to explain judicial outcomes. So, for example, while their study of decision making during times of war required them to include a variable representing the Court's preferences, Epstein and her colleagues rejected as utterly circular the use of the median's percentage liberal score in, say, the 1962, 1982, and 2002 terms to explain voting in the 1962, 1982, and 2002 terms. (They employed instead, as we noted earlier, the Segal-Cover scores.)

Of course, this same problem does not afflict research that relies on median votes in term $t-1$ to account for Court decisions in term t (that is, the use of *past votes* to explain *current* behavior). Numerous studies in fact take this approach, and for a good reason: the past turns out to be a satisfactory predictor of the future. Epstein and Mershon, for example, demonstrate that using past (one-year lagged) votes to locate the Justices along a policy scale in a given term yields fairly accurate results (that is, significant Spearman rank-order correlations) for the subsequent term, for all the terms in their study (1953-1991).[69] Likewise, they find that Court voting in term $t-1$ explains (to a statistically significant degree) voting in term t in all the legal areas they examined (criminal procedure, civil rights, First Amendment, economics, and judicial power).[70]

Our analysis too provides some support for this approach. Return to Figure 4 and note that if we relied on the median voter in the 1981 term (White) to characterize Court preferences in the 1982 term, we would have selected the "right" Justice: White was once again the median. But notice the problem that emerges if we were studying the 1962 term: the median in the 1961 term, Whittaker, actually retired mid way through the term; and Frankfurter left in August of 1962. Two new Justices joined the Court, Goldberg and White, making any *a priori* determination of the median's preferences in 1962—at least using past votes—nearly impossible.

IV Our Approach to Identifying the Median

Other problems with a reliance on votes (past or current) would be easy enough to summons. For example, even if we could correctly anticipate the median for the 1962 Term, we could not employ the data in Figure 4, which centers on criminal procedure, to study decisions involving, say, labor-management disputes; we would need to create a different array—a tedious process for the researcher analyzing a number of distinct legal areas. But further discussion of this and other drawbacks would only serve to underscore the larger point: all existing methods to identifying and locating the median have their share of problems, and hardly marginal problems at that. That is why we set out to develop a new and, we hope, more compelling, one.

Our approach (hereinafter the "Martin-Quinn" approach or method) is distinct from all those we have thus far discussed in that: (1) we base it on a *spatial model* of voting on the Court, which

[68] Technically, this means that the independent and dependent variables are identical: votes and votes. For more on this problem in research on the Court, see Epstein & Mershon, *supra* note 15, at 263; Segal & Spaeth, *supra* note 33.

[69] Epstein & Mershon, *supra* note 15, at 274.

[70] Epstein & Mershon, *supra* note 15. See also Lee Epstein, Thomas G. Walker & William J. Dixon, *The Supreme Court and Criminal Justice Disputes: A Neo-Institutional Perspective,* 33 Am. J. Pol. Sci. 825 (1989).

(2) we in turn use to derive a *probability* model in which the votes of the Justices are the dependent variables.[71] As such, our method provides a logically coherent approach to estimate *directly* the quantities of interest (the ideological location and identity of the median Justice) that also enjoys good statistical properties as long as some mild side conditions are met.

The spatial model that motivates the Martin-Quinn approach assumes that Justices have a choice between two alternatives.[72] These alternatives have policy consequences that we can represent by points in an issue space. Justices evaluate these policy consequences with utility functions that are single-peaked around some ideal policy point specific to each Justice. A (trivial) consequence of the model is that a Justice is most likely to vote for the alternative that is closest to her in the policy space.

The probability model that we derive from this theoretical model of spatial voting is a means of accounting for variability in the votes of Justices in relatively parsimonious terms. More important for the purposes of this article, it provides a framework that analysts can use to make principled statements about the location and identity of the median Justice on the Court.

The central building block for the probability model is that the probability of Justice j voting for the alternative coded 1[73] in case k is given by:

$$\Phi(\alpha_k + \beta_k \theta_j)$$

where $\Phi(\cdot)$ is the standard normal cumulative distribution function, α_k and β_k are deterministic functions of the policy locations of the two alternatives, and θ_j is the ideological location of Justice j's most preferred policy (her ideal point).[74] Because of the dichotomous nature of each Justice's decision, the probability that Justice j votes for the alternative coded 0 in case k is given by:

$$1 - \Phi(\alpha_k + \beta_k \theta_j).$$

The mathematics involved here follow directly from the theoretical model of voting and are just a representation of the fact that, under the theoretical model, Justice j will vote for the option generating the policy consequences she most prefers.

[71] While Grofman and Brazill's approach (see *supra* note 25) also is a method of uncovering an ideological scale from observed votes it is not *directly* linked to a theoretical model of voting. Further, because their method does not make use of an explicit probability model the researchers are unable to make statements about the uncertainty attached to their measures.

[72] For more on this point see *infra* note 73.

[73] As we note in the text, the model assumes that the Justices' votes can be treated as dichotomous (i.e., 0/1) variables with possible missing values. The coding rule for this dichotomization is not important as long as it is consistent across Justices within a particular case. We use an "affirm" / "reverse" dichotomy but other coding schemes would produce identical results. All that is necessary is that the votes of the Justices be coded consistently within a particular case. In other words, it is perfectly satisfactory to code votes on some cases as "with the majority" / "not with the majority" and votes on another subset of cases as "with the the Chief Justice" / "not with the Chief Justice", and so on. All such codings will produce *identical* results. The reason for this, as we develop in the text, is that the parameter β_k that appears in the expression for the vote probabilities is a free parameter that can take either positive or negative values. A positive β_k implies that rightward movement of an ideal point will make the Justice more likely to vote in the direction coded as "1" for case k while a negative β_k will imply the opposite. Since each case has a distinct β_k, the coding of votes needs only to be consistent across Justices within each case. Indeed, inspecting the sign of the estimated β_ks provides a principled means to test the accuracy of subjective "liberal" / "conservative" codings of votes. See Joseph Bafumi, Andrew Gelman, David Park, and Noah Kaplan, *Practical Issues in Implementing and Understanding Bayesian Ideal Point Estimation.* (2004) (available at http://polmeth.wustl.edu/retrieve.php?id=27).

[74] The full Martin-Quinn model is slightly more complicated due to issues of temporal dependence. These complications do not affect the intuition behind the formulation above.

Martin and Quinn have analyzed this model from a Bayesian perspective, which is simply a means of rationally learning about the probable values of the model parameters. As a practical matter, this is very similar to finding the values α_k, β_k, and θ_j for all cases and Justices that were most likely to have generated the observed votes (i.e., classical maximum likelihood estimation). A subtle (but, for this article, important) difference between Bayesian inference and classical likelihood inference is that Bayesian inference involves summarizing the joint probability distribution of all model parameters given the observed data, whereas classical inference involves the use of an estimator to pick a unique estimate of the model parameters along with an assessment of how this estimator would behave if new data samples were taken from the population of interest. The reason this is important here is that once the joint probability distribution of all the Justices' ideal points is known, calculating probability distributions for the location of the median Justice, the identity of the median Justice, and any other function of the ideal points is little more than an exercise in counting.[75]

To see why, consider the following stylized example involving three Justices in a single-dimensional issue space. Using the rules of Bayesian infererence we can calculate the joint probability distribution of the three ideal points given the observed voting data. Call the three ideal points θ_1, θ_2, and θ_3. With knowledge of the joint distribution of the ideal points we can take a random sample of θ_1, θ_2, and θ_3 from this distribution. In practice we would want to take a very large random sample, but for the sake of illustration we assume a sample of size 10. Table 3 displays this hypothetical sample, with each row representing one draw from the joint probability distribution of θ_1, θ_2, and θ_3.

θ_1	θ_2	θ_3
1.2	0.7	-1.4
0.8	1.1	-1.7
0.9	1.0	-1.1
0.6	1.2	-1.0
1.0	0.9	-0.8
0.7	1.3	-0.5
1.1	1.0	-1.3
0.9	1.2	-1.0
0.8	0.9	-0.9
1.1	1.0	-0.7

Table 3: Hypothetical sample from joint distribution of ideal points for a three Justice example.

With this sample in hand we can estimate the quantities that are of direct interest to us—the location and identify of the median Justice. Take first the location of the median Justice. The distribution of this quantity is simply that of the median element of $(\theta_1, \theta_2, \theta_3)$ from each row. In this example, this is (0.7, 0.8, 0.9, 0.6, 0.9, 0.7, 1.0, 0.9, 0.8, 1.0). The expected location of the median is just the mean of this distribution, which is $(0.7+0.8+0.9+0.6+0.9+0.7+1.0+0.9+0.8+1.0)/10 = 0.83$. To find the identity of the median Justice, we estimate the probability that Justice j (for all j) is the median of the Court. We do this by calculating the fraction of the draws for which θ_j is the median. From this exercise, we learn that approximately a 60% chance exists that Justice 1 is

[75] In contrast, even when analysts calculate appropriate measures of estimation uncertainty for classical estimates (which is rare in the scaling literature) the resulting point estimates and standard errors do not enable them to make statements about the probability that a particular Justice is the median or about the location of the median in a particular term.

the median, a 40% chance that Justice 2 is the median, and less than a 10% chance that Justice 3 is the median. We can make all these estimates arbitrarily precise by increasing the size of the random sample from the distribution of ideal points.

A Results from the Martin-Quinn Approach

With our method now noted, let us turn to the basic results it yields. We begin, in Figure 5, with the Martin-Quinn estimates of the location of the median Justice in each term from 1937-2002. The black (dotted) line indicates the location, such that the higher (positive) the number, the more conservative the median and the lower (negative) the number, the more liberal. As points of reference, we also plot (using the gray vertical lines) the range spanned by the most liberal and most conservative Justice in each term. So, for example, in the first term depicted, 1937, the median Justice (Charles Evans Hughes) is a relatively moderate -0.434; the most conservative (James McReynolds) is 2.813 and the most liberal (Hugo Black) is -2.852. In the last term we show (2002), Sandra Day O'Connor is the median (0.247), Clarence Thomas is the most conservative (3.637) and John Paul Stevens is the most liberal (-2.516).

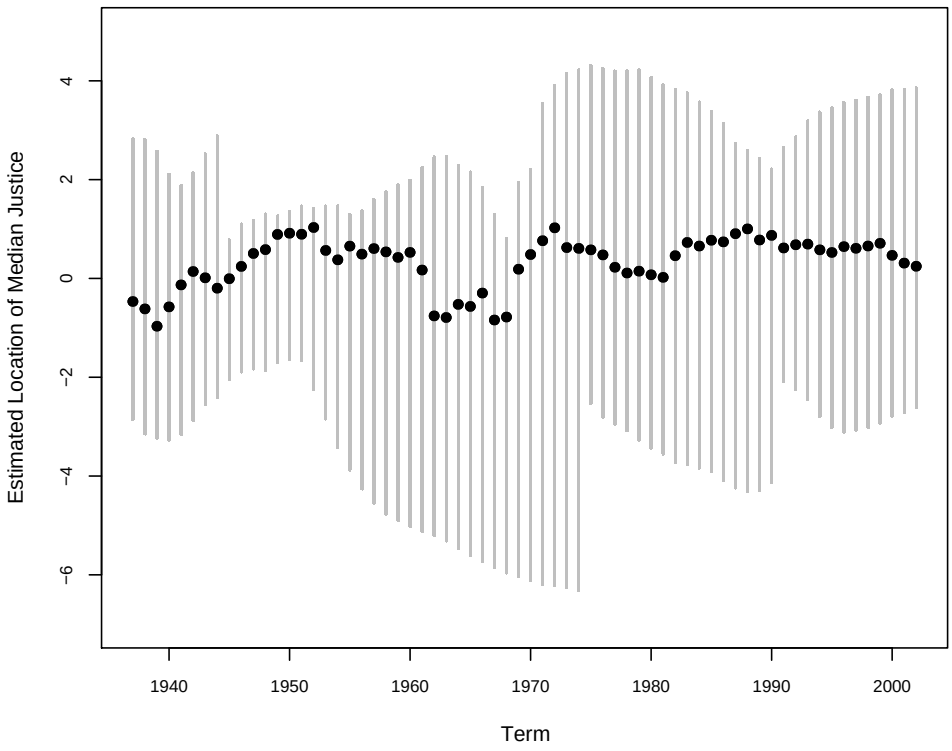


Figure 5: Estimated posterior distribution of the location of the median Justice for the dynamic ideal point model, 1937-2002. The y-axis is the estimated ideal point scale (from liberal to conservative); the x-axis denotes the term. The black (dotted) line indicates the location of the median, such that the higher (positive) the number, the more conservative the median and the lower (negative) the number, the more liberal. The gray (vertical) lines for each term represent the estimated location of the most liberal and conservative Justice each term.

From this figure flow a number of interesting findings. Since we bring several to light in Part

V, let us for now simply point to one: the location of the median fluctuates considerably over time—even during periods of stability in Court membership (or what social scientists call "natural courts").[76] Consider, for example, the period between the 1994 and 2002 terms. While no Justices joined or retired during these terms, the median ranged from a high of 0.711 (O'Connor) to a low (liberal) of 0.247 (O'Connor). This result, as we highlight later, supports speculation that the Rehnquist court median has begun to drift slightly to the left; on the other hand, it may call into question analyses and methods (including the Segal-Cover scores) that assume little, if any, change in the median's ideology during natural court periods.

These observations follow from our estimates of the *location* of the median. We also can invoke the Martin-Quinn method to calculate the *probability* that a particular Justice was the median in a particular term. We report this information in Table 4 for the Justice to which our estimates point as the most likely median in each term since 1937.

Term	Median	StdDev	Justice	Probability
1937	−0.466	0.230	Hughes	0.467
1938	−0.616	0.237	Stone	0.456
1939	−0.968	0.245	Reed	0.734
1940	−0.575	0.236	Reed	0.648
1941	−0.130	0.228	Byrnes	0.536
1942	0.141	0.229	Reed	0.576
1943	0.014	0.230	Reed	0.744
1944	−0.197	0.225	Reed	0.999
1945	−0.005	0.216	Reed	0.994
1946	0.244	0.178	Reed	0.864
1947	0.506	0.155	Reed	0.530
1948	0.584	0.169	Frankfurter	0.582
1949	0.891	0.193	Burton	0.275
1950	0.915	0.191	Burton	0.431
1951	0.894	0.211	Burton	0.660
1952	1.032	0.265	Clark	0.309
1953	0.567	0.288	Clark	0.699
1954	0.378	0.303	Frankfurter	0.869
1955	0.654	0.327	Frankfurter	0.792
1956	0.492	0.343	Clark	0.499
1957	0.605	0.364	Clark	0.996
1958	0.539	0.390	Clark	0.977
1959	0.426	0.425	Clark	0.943
1960	0.527	0.460	Stewart	0.947
1961	0.170	0.497	White	0.499
1962	−0.757	0.536	Goldberg	0.864

[76] See, e.g., Youngsik Lim, *An Empirical Analysis of Supreme Court Justices' Decision Making,* 29 J. Legal Stud. 721, at 752, n. 9 ("[A] natural court persists until its composition is changed. That is, when a new Justice is appointed to replace an incumbent, a new natural court begins"); David M. O'Brien, *Dialogue: Charting the Rehnquist Court's Course: How the Center Folds, Holds, and Shifts,*, 40 N.Y.L. Sch. L. Rev. 981, at 998 ("Political scientists generally analyze the Supreme Court in terms of 'natural courts,' periods in which the Court's personnel remain stable."); Saul Brenner, *Fluidity on the United States Supreme Court: A Reexamination,* 24 Am. J. Pol. Sci 526 (1980), at 528 ("A natural court is a court in which only a given nine Justices sit.").

1963	−0.790	0.563	Brennan	0.678
1964	−0.525	0.579	Goldberg	0.706
1965	−0.566	0.594	Black	0.895
1966	−0.296	0.610	Black	0.993
1967	−0.841	0.626	Marshall	0.625
1968	−0.781	0.637	Marshall	0.334
1969	0.187	0.652	Black	0.494
1970	0.484	0.660	Harlan	0.446
1971	0.765	0.671	White	1.000
1972	1.026	0.698	White	0.907
1973	0.625	0.715	White	0.615
1974	0.609	0.729	White	0.883
1975	0.580	0.206	Stewart	0.516
1976	0.477	0.218	Stewart	0.673
1977	0.226	0.223	Blackmun	0.560
1978	0.111	0.223	Blackmun	0.893
1979	0.147	0.260	White	0.938
1980	0.075	0.284	White	0.945
1981	0.022	0.298	White	0.981
1982	0.461	0.307	White	1.000
1983	0.728	0.320	White	0.879
1984	0.656	0.331	Powell	0.945
1985	0.773	0.337	Powell	0.982
1986	0.741	0.343	Powell	0.995
1987	0.907	0.357	White	0.795
1988	1.004	0.380	White	0.959
1989	0.779	0.412	White	0.997
1990	0.872	0.493	Souter	0.479
1991	0.618	0.208	Souter	0.343
1992	0.683	0.235	O'Connor	0.680
1993	0.695	0.255	Kennedy	0.770
1994	0.580	0.264	O'Connor	0.561
1995	0.526	0.269	Kennedy	0.740
1996	0.645	0.278	Kennedy	0.739
1997	0.610	0.294	Kennedy	0.919
1998	0.657	0.302	Kennedy	0.574
1999	0.711	0.313	O'Connor	0.901
2000	0.467	0.340	O'Connor	0.992
2001	0.311	0.367	O'Connor	1.000
2002	0.247	0.415	O'Connor	0.998

Table 4: Estimates of the location of the median Justice, the posterior standard deviation (standard errror) of the estimate, the Justice with the highest posterior probability of being the median Justice, and their probability of being the median Justice for the 1937-2002 terms.

Again, we could offer any number of observations about the results displayed in Table 4 but perhaps the most interesting, even surprising, is the high degree of uncertainty surrounding the identity of median Justice. While it is clear that O'Connor has been at the center in recent years—note the extraordinarily high probabilities of 0.901, 0.992, 1.000 and 0.998 for the 1999-2002 terms—such certainty about the median's identity is far from a norm: In 12 of the 66 terms we analyzed the highest probability that any one Justice was the median is less than 0.5; in several terms, it is as low as 0.3. What these results suggest is that during a non-trivial fraction of the years in our data set ($12/66 = 0.182$), another Justice(s)—and not merely the so-deemed "median"—played a crucial role in Court decisions.

B Attractive Features of the Martin-Quinn Approach

To the extent that the "center" of the Court is not always crystal clear, this is an intriguing finding—and one that points to a chief advantage of the Martin-Quinn approach: it enables us to to make rational and coherent probability claims about the quantities of interest, such as those pertaining to the the identity of the Justice with the highest posterior probability of being the median, along with that probability. E.g., "In the 1999 term, Justice O'Connor was the median Justice with a probability of 0.901; Justice Kennedy held that position with probability 0.099. In other words, O'Connor was nine times more likely than Kennedy to be the pivot in 1999."

But this is not the only attractive feature of the Martin-Quinn method. Recall that among the strongest assets of the Segal-Cover scores is the degree to which they comport with our knowledge of the Justices. We could say precisely the same of the Martin-Quinn method. To provide but a few examples:

1. In describing Justice Tom Clark's role in search and seizure cases, Dorin notes: "Irvine [v. California] marked the end of Clark's close to five years of silence regarding state searches and seizures. He had emerged as a major player in its resolution. Indeed, he had been its 'swing' Justice."[77] And, in fact, in 1952 and 1953, Clark emerges, on the Martin-Quinn estimates, as the Justice with the highest posterior probability of having been the median.

2. Powe writes that "Once Arthur Goldberg gave the liberals a solid majority and William J. Brennan, Jr. became the median Justice, the transformed Warren Court turned the New Deal constitutional order into the New Deal-Great Society constitutional order."[78] According to the Martin-Quinn estimates, Brennan did indeed emerge as the median shortly after Goldberg joined the Court.

3. Numerous sources claim that Justice David Souter, upon his ascension to the bench, "established himself as an independent thinker in the middle of the Court's ideological spectrum."[79] The Martin-Quinn estimates for the 1990 and 1991 terms accord with this speculation: Souter was the median Justice.

[77] Dennis D. Dorin, *Justice Tom Clark's Role in Mapp v. Ohio's Extension of the Exclusionary Rule To State Searches and Seizures,* 52 Case W. Res. 401 (2001).

[78] Powe, *supra* note 6, at 651.

[79] Christopher E. Smith & Thomas R. Hensley, *Unfulfilled Aspirations: The Court-Packing Efforts of Presidents Reagan and Bush,* 57 Alb. L. Rev. 1111 (1994); see also See Paul M. Barrett, *Independent Justice: David Souter Emerges as Reflective Moderate on the Supreme Court*, Wall St. J., Feb. 2, 1993.

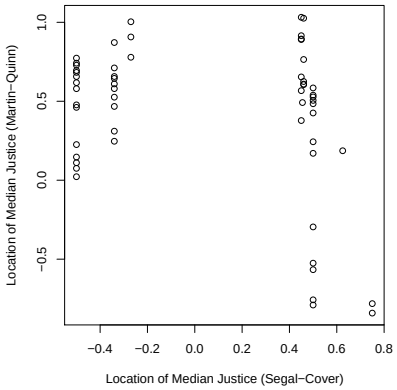
4. Virtually all contemporary commentary stresses the critical role Justice O'Connor (and, to a lesser extent, Kennedy) plays on the current Court by casting key votes in many consequential cases.[80] The Martin-Quinn approach confirms this commentary, showing that O'Connor has been the Court's median since the 1999 term.

Of course the Segal-Cover scores also appear facially valid. But on other dimensions important differences exist between the two measures—at least some of which shore up additional benefits of the Martin-Quinn approach. The most obvious, as we already have noted, is that the Martin-Quinn method (but not Segal and Cover's) enables us to generate probabilistic claims about our estimates of the median's location. So, while both the Segal-Cover and Martin-Quinn scores identify David Souter as the median Justice in the 1990 term,[81] to provide but one illustration, the former cannot convey the degree of uncertainty surrounding the choice of Souter. Which turns out to be important since the probability that Souter sat at the Court's center in the 1990 term is a relatively low .413 (especially compared, with, say, the 2002 figure for O'Connor of .998), meaning that another or other Justices were nearly as central to outcomes.

So too and in sharp contrast to the Segal-Cover scores, the Martin-Quinn approach performs well across issue areas. Martin and Quinn recently demonstrated as much a paper that re-estimates the model and quantities of interest (including Court medians) eliminating one legal area at a time.[82] Unlike the Segal-Cover approach, which, as we noted earlier, has difficulty locating the median

[80] See, e.g., Editorial, *A Moderate Term on the Court,* N.Y. Times, at 4:12, June 29, 2003 (noting Justice O'Connor's status as the "court's critical swing vote"); Associated Press, *Affirmative Action Case Puts Judges in Spotlight,* April 1, 2003 (describing Justices O'Connor and Kennedy as the "perennial swing voters"); Charles Lane, *Supreme Court: On the Sidelines, for Now,* Wash. Post, at A5, Sep. 30, 2001 (describing Justice O'Connor as the "perennial swing voter").

[81] As an aside, it is interesting to consider the overlap (or, more pointedly, the lack thereof) between the Segal-Cover and the Martin-Quinn scores. We already have noted that for the natural court sitting between 1994 and 2002, the Segal-Cover scores identify Souter as the median (see *supra* note 60); the Martin-Quinn approach, in contrast and in line with virtually all scholarly commentary, points to O'Connor (at least since 1999). Below we show that, overall, only a weak association exists between the two measures. (Note that negative association arises because the Segal-Cover measure is a measure of liberalism while the Martin-Quinn measure is a measure conservatism.)



Martin-Quinn estimate of the location the median Justice on Segal-Cover measure of the location of the median Justice.

[82] Andrew D. Martin & Kevin M. Quinn, *Can Ideal Point Estimates be Used as Explanatory Variables?*, Washington University in St. Louis typescript (2004). Available at: http://adm.wustl.edu/supct.php .

outside the civil liberties realm,[83] the Martin-Quinn method generally identifies the same Justice as the Court's center regardless of the legal issue at stake in the litigation.[84]

V Applications of the Martin-Quinn Estimates

If we have made a convincing case for the Martin-Quinn estimates of the median, then applications are virtually limitless. Scholars can deploy these estimates to address a range of questions, whether pertaining to intra-organizational issues (such as agenda setting and opinion assignment) or the Court's relationship with the other branches of government, the lower courts, and the states.[85] Indeed, any research that has previously invoked votes, party affiliations, or the Segal-Cover scores to locate the median Justice can now employ the Martin-Quinn estimates—and can do so without confronting the substantial drawbacks of those other approaches. So, for example, the Martin-Quinn method does not suffer from the same "circularity" problem that plagues the use of votes: by purging the particular issue area of interest and recomputing the Martin-Quinn estimates, they are perfectly appropriate for use in studies of Court decision making; deploying the estimates in this way, in other words, would not amount to using votes to predict votes.[86] By the same token, they are a far more efficient indicator of ideology than party affiliation, and they perform adequately, as we have just noted and in contrast to the Segal-Cover scores, across a range of legal questions.

In light of space limitations, we leave it to others to flesh out fully applications of the Martin-Quinn estimates. We focus instead on demonstrating how we might employ the estimates to examine two emerging pieces of wisdom about the Court; namely, that (1) the Court and, particularly Justice O'Connor, has moved to the "left" or, at least, has grown more moderate in recent terms and (2) the next President will be able to "remake" the Court.

A A More Moderate Court (O'Connor)?

In a recent newspaper article the long-time Court commentator, Joan Biskupic, wrote that, "Although [Justice] O'Connor usually votes with the court's conservative wing, she increasingly has sided with liberals in significant cases that have been decided by 5-4 votes. It's led some conservative observers to wonder whether O'Connor, at 74, is turning to the left."[87]

To the extent that many commentators—regardless of their ideological, epistemological, or methodological orientation—seem to think that O'Connor and, thus, the Court itself has grown more moderate over time, Biskupic is correct.[88] They, like Biskupic, point to recent Court decisions

[83] See Mershon & Epstein, *supra* note 15.

[84] The estimated locations of the medians always correlate above 0.9 when deleting an issue at a time; and the method identifies the same Justice as the median Justice 87 percent of the time as Court's center regardless of the legal issue at stake in the litigation. The only differences are in terms where there is much uncertainty about who is the median Justice, such as Justice Burton in 1949.

[85] Analysts already have put the Martin-Quinn scores to use to investigate the Court's interactions with Congress. See Barry Friedman and Anna L. Harvey, *Electing the Supreme Court,* 78 Ind. L.J. 123 (2003).

[86] Martin & Quinn introduce this approach in *supra* note 82. On the other hand, this paper demonstrates that as an empirical issue, it matters not if scholars invoke the purged estimates or those based on all votes.

[87] Joan Biskupic, O'Connor Not Confined by Conservatism, USA Today, June 24, 2004, p. 4A.

[88] See, e.g., Lino A. Graglia, *The Myth of a Conservative Supreme Court: The October 2000 Term,* 26 Harv. J.L. & Pub. Pol'y 281 (2003); Christopher E. Smith & Madhavi McCall, *Criminal Justice and the 2001-02 United States Supreme Court Term,*, 2003 Mich. St. DCL L. Rev. 413 (2003), at 418 ("In the [2001-02] term ... Sandra Day O'Connor, joined her more liberal colleagues to form five-member majorities in all three closely-divided decisions

upholding Michigan Law School's use of race in admissions,[89] the Family Medical Leave Act,[90] and parts of the McCain-Feingold campaign finance act,[91] not to mention the eradication of Texas's sodomy law in Lawrence v. Texas.[92] In all three, O'Connor was in the majority and likely critical to the formation of the prevailing coalitions at that. But to what extent can we generalize from these cases? Do they represent a significant turn to the left on the part of the Court (O'Connor) or mere anomalies, though hardly inconsequential ones?

To explore these questions, we used the Martin-Quinn estimates to plot, in Figure 6, the ideal points of Sandra Day O'Connor and of the median Justice (solid black circles indicate the overlap) over the last two decades. We also show the "cutpoint" for Grutter v. Bollinger,[93] such that during terms above the line, the odds are that the Court would have struck down the Michigan affirmative action program and during terms below it, the Court, in all likelihood, would have upheld it (as it did in the 2002 term).[94]

From this figure we can lend systematic support to the informed speculation that O'Connor (the Court) has taken a turn to the left. Note that O'Connor's line appears to drift downward, indicating increased liberal voting on her part. To be more precise, at the start of the current natural court era in 1994, O'Connor's ideal point sat at a relatively conservative 0.637; by the 2002 term, it had moved to 0.247. By any measure this is quite an impressive shift but, we hasten to note, we should not take it to mean that O'Connor is now a downright liberal. She is still quite a distance from the most left-leaning Justice in our data (William O. Douglas in the 1974 term with a score of -6.31).[95] She is also far from the most liberal median since 1937; that distinction belongs to Stanley F. Reed in the 1939 term (with a score of -0.978). On the other hand, the leftward trend in the data is so unmistakable that it is hard to deny claims in recent writings about the emergence of a more moderate Supreme Court.

If only because Figure 6 provides empirical evidence of the veracity of contemporary characterizations of the Court it is interesting in its own right. But our results also have implications both for empirical and doctrinal analyses of judicial decision making. From an empirical standpoint, as we noted earlier, they draw attention to the utility of the "natural court" as a conceptual and analytic device. Our findings also may call into question an assumption underlying many theories of decision making; namely, that the Justices' policy preferences remain stable over time.[96] A

favoring claims of individuals."); Charles Lane, *Courting O'Connor; Why the Chief Justice isn't the Chief Justice,* Washington Post, July 4, 2004 (Final Edition), Magazine, W10 ("The Michigan cases erased much of the animosity liberals harbored against O'Connor for Bush v. Gore—and enraged the right."); Charles Rothfeld, *The Court on Balance; By Sometimes Leaning Left, Justice O'Connor Centers the Supreme Court*, Legal Times, July 12, 2004, p. 52 ("The liberals dominated in the eight civil cases decided by 5-4 votes, winning six of them. O'Connor voted with the liberal majority in four of these cases."); Alex Daniels, *RETAIL Unbridled Court to Rule on Size of Wal-Mart Suit,* Arkansas Democrat-Gazette (Little Rock), August 8, 2003 ("In past years . . . the 9th was overturned more often than other circuits. Last term's results might indicate the circuit is getting more moderate . . . Also, it could mean the Supreme Court is issuing more liberal-leaning decisions.").

[89]Grutter v. Bollinger, 539 U.S. 306 (2003).

[90]Nevada Department of Human Resources v. Hibbs, 538 U.S. 721 (2003).

[91]McConnell v. Federal Election Commission, 540 U.S. 93 (2003).

[92]539 U.S. 558 (2003).

[93]539 U.S. 306 (2003).

[94]The cutpoint is the point in the ideological space that is halfway between the policy position of an affirm vote and a reverse vote. A Justice whose ideal point is at the cutpoint is indifferent between the two outcomes. A bit of algebra reveals that the cutpoint is a simple function of the α and β parameters introduced in Section IV.

[95]In the Appendix to this article, we supply Martin-Quinn estimates of the ideal points of all Justices for all terms between 1937 and 2002.

[96]For more on this point, see Martin & Quinn, *supra* note 17; Lee Epstein, Valerie Hoekstra, Jeffrey A. Segal, &

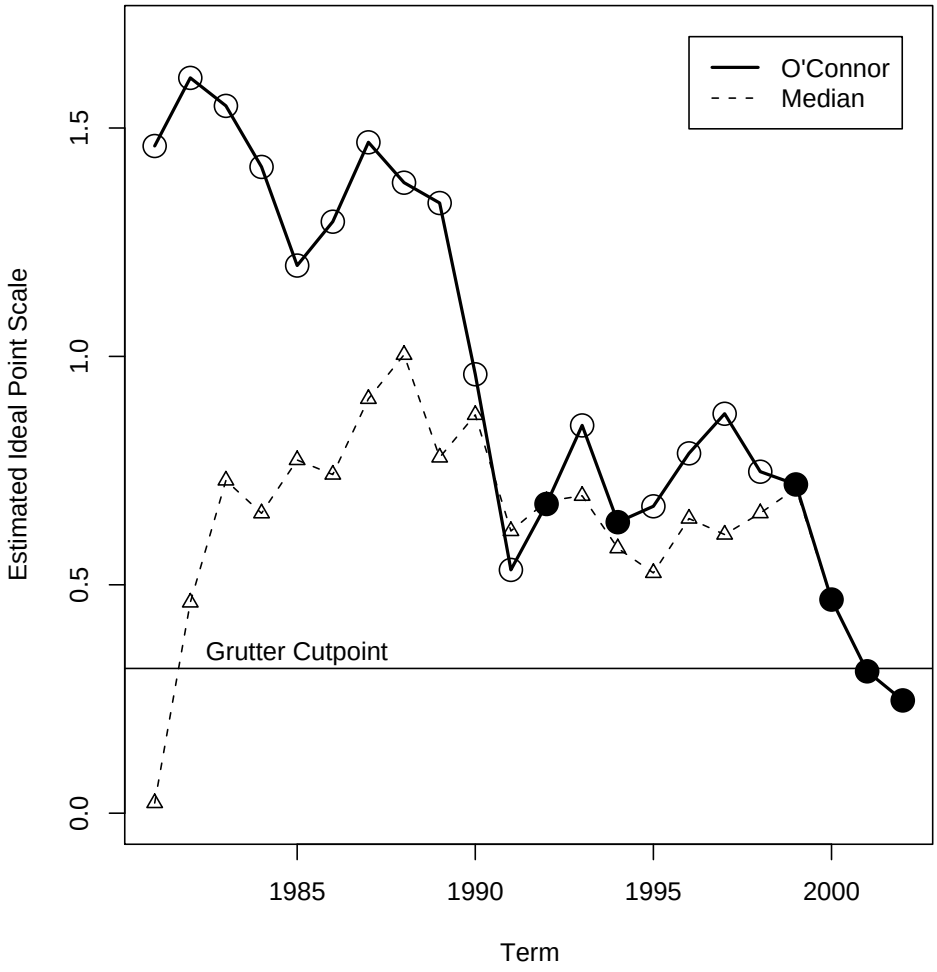


Figure 6: Time series plot of Justice O'Connor's and the median's estimated ideal point, 1981-2002 terms. The solid black circles indicate that Justice O'Connor is most likely the median Justice. The horizontal line indicates the cutpoint for Grutter v. Bollinger such that points above the line indicate a probability of greater than .50 of voting to strike down the program; those below the line indicate a greater than .50 probability of voting to uphold the program (as the Court did in the 2002 term).

mere glance at Figure 6's depiction of the median's ideal point during the 1994-2002 terms and of O'Connor's across the entire period should dispel any doubt that fluctuation, and significant fluctuation at that, is possible.

From a doctrinal perspective, O'Connor's (and the Court's) turn to the left, is more than a mere aggregation of votes and probabilities; it has been of some consequence at the individual case level as well. We illustrate just one example with the horizontal line in Figure 6 indicating the Grutter cutpoint (again, points north of the line indicate a probability of greater than .50 of voting against the program; those south of the line indicate a greater than .50 probability of voting for the program).[97] Notice that in 1994, at the start of the current natural court era, the probability of the Court supporting the Michigan Law affirmative action program was just 0.318. Only in 2001 and 2002 did that figure increase to 0.500 or greater. To think about another way, the likelihood of O'Connor providing the key vote to *uphold* the program was quite small for any term prior to 2001: E.g., in the 1999 term it was a slim 0.228; the probability increases to 0.387 in 2000 but only beginning in 2001 does it surpass the 0.500 mark (0.507 in 2001 and 0.504 in 2002).

B A New Court? Bush versus Kerry Appointees

The critical role O'Connor plays on the current Court has not, as we have emphasized throughout, gone unnoticed. Earlier this year Forbes Magazine ranked her as the sixth most powerful woman in America, right behind Hillary Rodham Clinton;[98] and just this past winter Michael S. Greve quipped that "It's Sandra Day O'Connor's country; the rest of us just dance to her fiddle."[99]

But for how much longer? In light of O'Connor's age (74[100]) and the length of her service on the Court (23 years[101]) rumors about a possible retirement abound.[102] Along with the rumors of course has come a good deal of speculation about the fundamental changes an O'Connor departure would bring to extant law and policy. As one commentator put it, "If O'Connor steps down it would be the judicial equivalent of an earthquake. Replacing her with either a consistent conservative or liberal would affect the majorities on a broad range of issues." [103]

The Kerry and Bush camps apparently agree, and are attempting to convince voters to make the speculation a part of their calculus.[104] But to what extent does it hold? If O'Connor were to

Harold J. Spaeth, *Do Political Preferences Change? A Longitudinal Study of U.S. Supreme Court Justices,* 60 J. Pol. 801 (1998).

[97]See also *supra* note 94.

[98]This list is available at: http://www.forbes.com/2004/08/18/04powomland.html.

[99]Michael Greve, *The Term the Constitution Died,* 2 Geo. J.L. & Pub. Pol'y 227 (2004), at 227:

[100]O'Connor was born on March 26, 1930.

[101]O'Connor was nominated to the Court by Ronald Reagan on August 19, 1981 and confirmed by the Senate on September 21, 1981.

[102]See, e.g., Michael Kirkland, *Analysis: Peering into the high court's future,* United Press International report, August 27, 2004 ("the 74-year-old O'Connor has been the subject of retirement rumors for years."); Ana Radelat, *Federalists could have more influence on the Supreme Court,* Gannett News Service, March 26, 2004 ("Retirement rumors ... have swirled around ... Sandra Day O'Connor, 74."); Geo Beach, *Real Alaskans like political wild cards,* Anchorage Daily News (Alaska), August 14, 2004, B6 ("Sandra Day O'Connor is only [sic] 70, but she's been fighting a cancer and may also be considering retirement."); Thomas B. Scheffey, Connecticut Law Tribune, March 29, 2004, Vol. 30, No. 13, Pg. 4 ("Sandra Day O'Connor [is] believed close to retirement.") .

[103]Kirkland, *supra* note 102.

[104]E.g., Revere points to a Kerry television commercial warning voters that the Court is just "one vote away from outlawing a woman's right to choose." The ad, according to a Kerry spokesperson, is "based on the potential impact of the retirement of Arizona native Sandra Day O'Connor, who is considered a swing vote on the abortion issue."

resign within the next four years, would the the next President have an opportunity to "remake" the Court, that is, push it further to the right (a George W. Bush administration) or tilt it to the left (a John Kerry administration)?

We explore this question in Figure 7, in which we offer four plots—one for O'Connor, the Justice of primary interest here, along with the three others over the age of 70: Stevens (84[105]), Rehnquist (80[106]), and Ginsburg (71[107]).[108] In each panel, the horizontal axis is the predicted location of the ideal point of the median Justice, such that the lower (negative) numbers indicate liberal medians and the higher (positive) numbers indicate conservative medians. The dashed line denotes the current position of the median Justice (Sandra Day O'Connor); the black dots indicate the predicted (new) location of the median Justice contingent upon the ideology of the key players involved in the appointment and confirmation of Supreme Court Justices: the President and the Senate.

To see how these plots facilitate the development of predictions about the effect of next (2004) President on the Court, consider the Stevens and Ginsburg panels (which return identical results). Notice that should either retire the Court's median will not budge as long as Kerry becomes President *or* Bush is reelected and the Democrats regain control of the Senate. If, on the other hand, the executive branch and the Senate remain under Republican control, odds are that the median will move considerably. In fact, the resulting Court could very well go on to become the most right-leaning since 1952 (a median location of 0.869 in, e.g., 2005 versus 1.031 in the 1952 term.)

The prediction works in the reverse for Rehnquist. Were he to leave during a Bush presidency and a Republican-dominated Senate, we anticipate little change in the median Justice and, thus, the outcomes of Court cases. But should the Chief retire during a period of divided government (e.g., a Bush presidency and a Democratic Senate) *or* a Kerry administration, we predict substantial change: the *après*-Rehnquist Court may emerge as among the most liberal in recent memory, with a median in the neighborhood of -0.8 (depending on assumptions about the precise location of the Senate) versus -0.841 in 1967, the most liberal term since 1950.

In the cases of Stevens, Ginsburg, and Rehnquist, then, the next President does have some opportunity to move the current Court to the right or left but under many scenarios, continuity—rather than change—is likely to result. This is not so of Sandra Day O'Connor. Under no circumstances that we have considered will the median remain "as is" should she retire; actually, as Figure

See C. T. Revere, *Campaign 2004,* Tucson Citizen, May 1, 2004, Pg. 1A.

[105]Stevens was born on April 20, 1920.

[106]Rehnquist was born on October 1, 1924.

[107]Ginsburg was born on March 15, 1933.

[108]By plotting the four oldest Justices we do not mean to suggest that age is the only or even chief factor motivating a retirement decision. In fact, some commentary suggests that strategic considerations are paramount; e.g., Justices consider who will replace them when deciding whether or not to step down from the bench. See, e.g., Kirkland *supra* note 102 ("Whether [Rehnquist] retires in the next four years probably will be determined by whether President George W. Bush or a putative President John F. Kerry gets the chance to replace him."). This is an interesting idea but one that deserves far more careful consideration than we could possibly devote to it here. Our purpose instead is to consider several possible scenarios—a category into which departures by O'Connor, Stevens, Rehnquist, and Ginsburg surely fall. Savage makes this clear when he points to these four as the leading candidates: "Justice Ruth Bader Ginsburg, 71, has battled cancer since 1999. Justice John Paul Stevens is 84. Chief Justice William Rehnquist, 79, and Justice Sandra Day O'Connor, 74, are said to have eyed retirement for several years." Charlie Savage, *Next Administration Could Get to Name 4 Justices,* The Boston Globe, July 7, 2004, Pg. A3.

[109]See Brian R. Sala and James F. Spriggs, II. *Designing Tests of the Supreme Court and the Separation of Powers.* Pol. Research Q., forthcoming (2004).

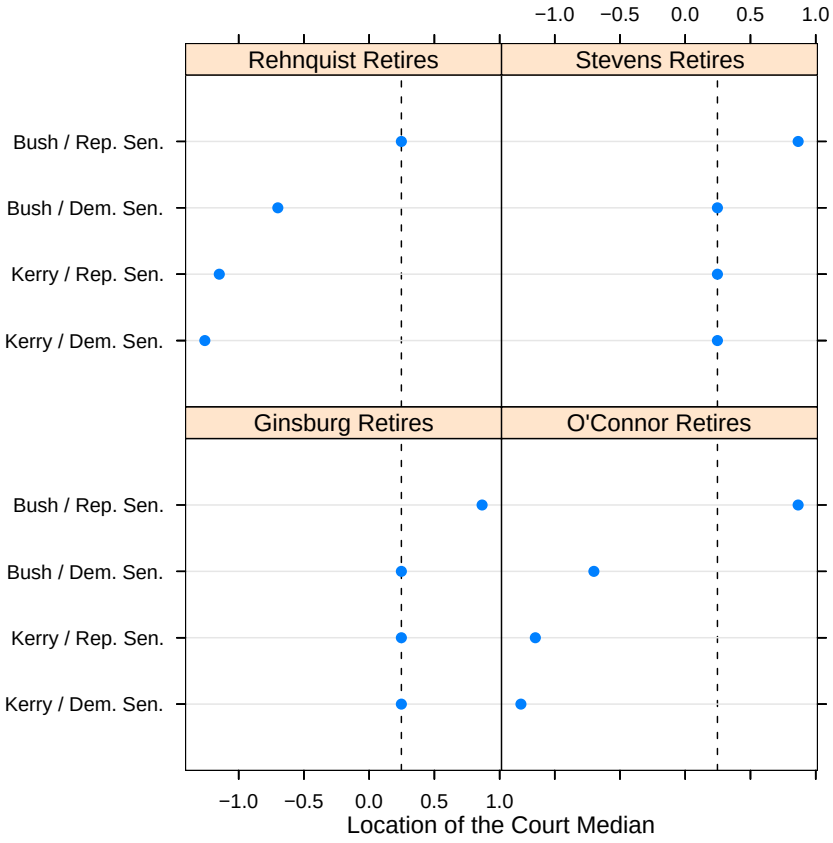


Figure 7: Predicted location of the median Justice for a vacancy on the Supreme Court. The horizontal axis is the predicted location of the ideal point of the median Justice, such that the lower (negative) numbers indicate liberal medians and the higher (positive) numbers indicate conservative medians. The dashed line denotes the current position of the median Justice (Sandra Day O'Connor); the black dots indicate the predicted (new) location of the median Justice contingent upon the ideology of the President and the Senate. We estimated these positions using Sala and Spriggs's method.[109]

7 depicts, rather substantial ideological swings are quite likely. Some are entirely predictable; for example, under a unified Democratic government, Kerry may very well push the Court to near-record levels of liberalism and under a unified Republican government, Bush could do the same except, of course, in the opposite direction. But at least one result is unexpected: Under a Bush presidency and a Democratic Senate, odds are that the Court's median will move—though to the *left, not the right* (from its current location of 0.247 to -0.700).

So to return to the question we posed at the outset—will a Sandra Day O'Connor departure provide the next President with an opportunity to remake the Court?—our response is clearly in the affirmative for Kerry. Regardless of the composition of the Senate, the data suggest that Kerry will be in the near-historic position to move the Court—and, crucially, to move the Court in a direction that favors his vision of public policy. To the extent that O'Connor's retirement would enable Bush too to move the Court, he is in much the same position as Kerry—with one very critical distinction: only with a Republican Senate in play will he, in all likelihood, be able to shape it in a way that reflects his political preferences. Under all other scenarios, an O'Connor retirement ought not be at the top of Bush's wish list, as a more liberal Court is likely to result. Far better off from the current President's perspective would be a Stevens or Ginsburg resignation, which would result in the status quo or a more right-leaning Court depending on the composition of the Senate.

VI Conclusion

Theorizing and analyzing the Court's "center" could take many forms. We have considered but one approach to each: a conceptualization that relies on social science theories about the importance of the median voter and a method that enables us to estimate the identity of that voter and her location, and to quantify the degree of uncertainty we have about those estimates.

Without belying the importance of other approaches—be they jurisprudential, doctrinal, interpretive, statistical, or mathematical—we hope ours has something to offer to the study of centrist judges. We worked to demonstrate as much via two applications, the first of which confirmed the received wisdom about the Court's (O'Connor's) turn to the left. The second offered a more nuanced response: an O'Connor departure would, in all likelihood, generate real change on the Court though perhaps in unexpected ways.

These are but two applications of the Martin-Quinn estimates; we can conjure up many other possibilities and we trust other investigators can do the same. But more than that we hope the method we presented here proves useful for the study *all* Justices, and not exclusively for analyses of the median. To that end we have included an appendix that houses estimates of the ideal points of each and every Justice who has served since the 1937 term.[110] Potential uses for these scores, we believe, are highly variegated. Studies of the effect of public opinion, the economy, and crime (to name but a few socio-legal factors) on the decisions of particular Justices, along with investigations into agenda setting, opinion assignment, and the many other processes internal to the Court are just some of the possibilities—as are, of course, any number of normative and empirical projects related to the crucially important and ever-intriguing "center" of the Court.

[110] We encourage scholars to check the web site `http://adm.wustl.edu/supct.php` for updates; the 2003 term data should be available by December 2004.

Appendix. Martin-Quinn Scores for All Justices, 1937-2002

Term	Justice	M-Q	Term	Justice	M-Q	Term	Justice	M-Q
1937	Black	−2.852	1942	Frankfurter	0.416	1985	Rehnquist	3.375
1938	Black	−3.126	1943	Frankfurter	0.420	1986	Rehnquist	3.139
1939	Black	−3.206	1944	Frankfurter	0.406	1987	Rehnquist	2.732
1940	Black	−3.229	1945	Frankfurter	0.661	1988	Rehnquist	2.597
1941	Black	−3.113	1946	Frankfurter	1.015	1989	Rehnquist	2.421
1942	Black	−2.850	1947	Frankfurter	0.894	1990	Rehnquist	2.173
1943	Black	−2.525	1948	Frankfurter	0.637	1991	Rehnquist	1.876
1944	Black	−2.409	1949	Frankfurter	0.363	1992	Rehnquist	1.816
1945	Black	−2.029	1950	Frankfurter	0.225	1993	Rehnquist	1.636
1946	Black	−1.850	1951	Frankfurter	0.074	1994	Rehnquist	1.641
1947	Black	−1.726	1952	Frankfurter	0.051	1995	Rehnquist	1.616
1948	Black	−1.580	1953	Frankfurter	0.370	1996	Rehnquist	1.477
1949	Black	−1.625	1954	Frankfurter	0.370	1997	Rehnquist	1.426
1950	Black	−1.584	1955	Frankfurter	0.679	1998	Rehnquist	1.625
1951	Black	−1.473	1956	Frankfurter	0.875	1999	Rehnquist	1.574
1952	Black	−1.177	1957	Frankfurter	1.246	2000	Rehnquist	1.567
1953	Black	−1.514	1958	Frankfurter	1.561	2001	Rehnquist	1.298
1954	Black	−1.575	1959	Frankfurter	1.720	2002	Rehnquist	1.073
1955	Black	−1.855	1960	Frankfurter	1.789	1937	Roberts	−0.037
1956	Black	−2.037	1961	Frankfurter	1.800	1938	Roberts	0.370
1957	Black	−2.095	1993	Ginsburg	−0.303	1939	Roberts	1.012
1958	Black	−1.980	1994	Ginsburg	−0.555	1940	Roberts	1.689
1959	Black	−1.943	1995	Ginsburg	−0.624	1941	Roberts	1.884
1960	Black	−1.815	1996	Ginsburg	−0.830	1942	Roberts	2.141
1961	Black	−1.721	1997	Ginsburg	−1.047	1943	Roberts	2.518
1962	Black	−1.639	1998	Ginsburg	−1.272	1944	Roberts	2.883
1963	Black	−1.416	1999	Ginsburg	−1.613	1942	Rutledge	−1.079
1964	Black	−0.936	2000	Ginsburg	−1.679	1943	Rutledge	−1.118
1965	Black	−0.576	2001	Ginsburg	−1.677	1944	Rutledge	−1.280
1966	Black	−0.295	2002	Ginsburg	−1.642	1945	Rutledge	−1.097
1967	Black	−0.092	1962	Goldberg	−0.770	1946	Rutledge	−1.343
1968	Black	0.001	1963	Goldberg	−0.907	1947	Rutledge	−1.677
1969	Black	0.086	1964	Goldberg	−0.561	1948	Rutledge	−1.764
1970	Black	0.063	1954	Harlan	0.869	1986	Scalia	1.378
1970	Blackmun	1.850	1955	Harlan	1.090	1987	Scalia	1.526
1971	Blackmun	1.805	1956	Harlan	1.305	1988	Scalia	1.657
1972	Blackmun	1.455	1957	Harlan	1.596	1989	Scalia	1.835
1973	Blackmun	1.307	1958	Harlan	1.724	1990	Scalia	1.985
1974	Blackmun	1.029	1959	Harlan	1.856	1991	Scalia	2.300
1975	Blackmun	0.856	1960	Harlan	1.944	1992	Scalia	2.318
1976	Blackmun	0.633	1961	Harlan	2.236	1993	Scalia	2.401
1977	Blackmun	0.262	1962	Harlan	2.461	1994	Scalia	2.649
1978	Blackmun	0.105	1963	Harlan	2.473	1995	Scalia	2.925
1979	Blackmun	−0.069	1964	Harlan	2.285	1996	Scalia	3.184

1980	Blackmun	−0.153	1965	Harlan	2.153	1997	Scalia	3.321
1981	Blackmun	−0.469	1966	Harlan	1.840	1998	Scalia	3.397
1982	Blackmun	−0.543	1967	Harlan	1.286	1999	Scalia	3.570
1983	Blackmun	−0.093	1968	Harlan	0.778	2000	Scalia	3.696
1984	Blackmun	−0.218	1969	Harlan	0.663	2001	Scalia	3.707
1985	Blackmun	−0.765	1970	Harlan	0.569	2002	Scalia	3.613
1986	Blackmun	−0.928	1937	Hughes	−0.434	1990	Souter	0.942
1987	Blackmun	−0.930	1938	Hughes	−0.289	1991	Souter	0.558
1988	Blackmun	−0.963	1939	Hughes	0.299	1992	Souter	0.156
1989	Blackmun	−0.845	1940	Hughes	0.832	1993	Souter	−0.359
1990	Blackmun	−1.148	1941	Jackson	0.225	1994	Souter	−0.508
1991	Blackmun	−1.393	1942	Jackson	0.269	1995	Souter	−0.541
1992	Blackmun	−1.542	1943	Jackson	0.184	1996	Souter	−0.582
1993	Blackmun	−1.806	1944	Jackson	0.231	1997	Souter	−0.731
1937	Brandeis	−0.514	1945	Jackson	0.634	1998	Souter	−0.847
1938	Brandeis	−0.474	1946	Jackson	1.026	1999	Souter	−1.188
1956	Brennan	−0.590	1947	Jackson	1.156	2000	Souter	−1.304
1957	Brennan	−0.714	1948	Jackson	1.297	2001	Souter	−1.392
1958	Brennan	−0.712	1949	Jackson	0.898	2002	Souter	−1.386
1959	Brennan	−0.868	1950	Jackson	0.785	1975	Stevens	0.035
1960	Brennan	−0.874	1951	Jackson	0.707	1976	Stevens	−0.125
1961	Brennan	−0.728	1952	Jackson	0.924	1977	Stevens	−0.015
1962	Brennan	−0.967	1953	Jackson	0.840	1978	Stevens	−0.291
1963	Brennan	−0.825	1987	Kennedy	1.112	1979	Stevens	−0.268
1964	Brennan	−0.685	1988	Kennedy	1.385	1980	Stevens	−0.265
1965	Brennan	−0.844	1989	Kennedy	1.290	1981	Stevens	−0.250
1966	Brennan	−0.994	1990	Kennedy	1.090	1982	Stevens	−0.546
1967	Brennan	−1.039	1991	Kennedy	0.732	1983	Stevens	−0.593
1968	Brennan	−0.911	1992	Kennedy	0.878	1984	Stevens	−0.487
1969	Brennan	−0.830	1993	Kennedy	0.719	1985	Stevens	−0.468
1970	Brennan	−0.932	1994	Kennedy	0.666	1986	Stevens	−0.578
1971	Brennan	−1.088	1995	Kennedy	0.555	1987	Stevens	−0.509
1972	Brennan	−1.351	1996	Kennedy	0.672	1988	Stevens	−0.631
1973	Brennan	−1.675	1997	Kennedy	0.617	1989	Stevens	−1.026
1974	Brennan	−1.951	1998	Kennedy	0.715	1990	Stevens	−1.713
1975	Brennan	−2.528	1999	Kennedy	0.951	1991	Stevens	−2.088
1976	Brennan	−2.809	2000	Kennedy	0.888	1992	Stevens	−2.249
1977	Brennan	−2.918	2001	Kennedy	1.011	1993	Stevens	−2.451
1978	Brennan	−2.894	2002	Kennedy	0.902	1994	Stevens	−2.802
1979	Brennan	−2.853	1967	Marshall	−0.898	1995	Stevens	−3.021
1980	Brennan	−2.693	1968	Marshall	−0.911	1996	Stevens	−3.118
1981	Brennan	−2.672	1969	Marshall	−0.848	1997	Stevens	−3.072
1982	Brennan	−2.504	1970	Marshall	−0.883	1998	Stevens	−3.021
1983	Brennan	−2.807	1971	Marshall	−0.983	1999	Stevens	−2.931
1984	Brennan	−3.015	1972	Marshall	−1.277	2000	Stevens	−2.789
1985	Brennan	−3.113	1973	Marshall	−1.444	2001	Stevens	−2.715
1986	Brennan	−3.370	1974	Marshall	−1.473	2002	Stevens	−2.616
1987	Brennan	−3.443	1975	Marshall	−2.041	1958	Stewart	0.883

1988	Brennan	−3.538	1976	Marshall	−2.341	1959	Stewart	0.651
1989	Brennan	−3.582	1977	Marshall	−2.626	1960	Stewart	0.531
1994	Breyer	−0.474	1978	Marshall	−3.002	1961	Stewart	0.483
1995	Breyer	−0.705	1979	Marshall	−3.262	1962	Stewart	0.651
1996	Breyer	−0.947	1980	Marshall	−3.437	1963	Stewart	0.484
1997	Breyer	−1.022	1981	Marshall	−3.555	1964	Stewart	0.647
1998	Breyer	−1.009	1982	Marshall	−3.722	1965	Stewart	0.829
1999	Breyer	−0.993	1983	Marshall	−3.77	1966	Stewart	0.907
2000	Breyer	−1.356	1984	Marshall	−3.838	1967	Stewart	0.468
2001	Breyer	−1.383	1985	Marshall	−3.913	1968	Stewart	0.662
2002	Breyer	−1.400	1986	Marshall	−4.093	1969	Stewart	0.623
1969	Burger	1.941	1987	Marshall	−4.238	1970	Stewart	0.604
1970	Burger	2.185	1988	Marshall	−4.310	1971	Stewart	0.210
1971	Burger	2.425	1989	Marshall	−4.284	1972	Stewart	0.189
1972	Burger	2.238	1990	Marshall	−4.124	1973	Stewart	0.543
1973	Burger	2.171	1937	McReynolds	2.813	1974	Stewart	0.409
1974	Burger	2.107	1938	McReynolds	2.814	1975	Stewart	0.529
1975	Burger	1.968	1939	McReynolds	2.576	1976	Stewart	0.483
1976	Burger	1.869	1940	McReynolds	2.059	1977	Stewart	0.314
1977	Burger	1.546	1949	Minton	1.120	1978	Stewart	0.544
1978	Burger	1.408	1950	Minton	1.274	1979	Stewart	0.476
1979	Burger	1.174	1951	Minton	1.331	1980	Stewart	0.656
1980	Burger	1.346	1952	Minton	1.156	1937	Stone	−0.780
1981	Burger	1.464	1953	Minton	0.818	1938	Stone	−0.750
1982	Burger	1.321	1954	Minton	0.845	1939	Stone	−0.752
1983	Burger	1.498	1955	Minton	0.889	1940	Stone	−0.308
1984	Burger	1.820	1939	Murphy	−1.528	1941	Stone	0.404
1985	Burger	1.957	1940	Murphy	−1.484	1942	Stone	0.267
1945	Burton	0.485	1941	Murphy	−1.435	1943	Stone	0.172
1946	Burton	0.538	1942	Murphy	−1.579	1944	Stone	0.514
1947	Burton	0.873	1943	Murphy	−1.671	1945	Stone	0.573
1948	Burton	0.942	1944	Murphy	−1.392	1937	Sutherland	1.966
1949	Burton	0.933	1945	Murphy	−1.283	1991	Thomas	2.605
1950	Burton	0.949	1946	Murphy	−1.705	1992	Thomas	2.854
1951	Burton	0.893	1947	Murphy	−1.643	1993	Thomas	3.190
1952	Burton	1.185	1948	Murphy	−1.523	1994	Thomas	3.363
1953	Burton	1.271	1981	O'Connor	1.461	1995	Thomas	3.437
1954	Burton	1.240	1982	O'Connor	1.610	1996	Thomas	3.513
1955	Burton	1.247	1983	O'Connor	1.549	1997	Thomas	3.523
1956	Burton	1.242	1984	O'Connor	1.415	1998	Thomas	3.556
1957	Burton	1.096	1985	O'Connor	1.199	1999	Thomas	3.493
1937	Butler	1.762	1986	O'Connor	1.295	2000	Thomas	3.533
1938	Butler	2.015	1987	O'Connor	1.469	2001	Thomas	3.500
1941	Byrnes	−0.180	1988	O'Connor	1.380	2002	Thomas	3.637
1937	Cardozo	−1.684	1989	O'Connor	1.336	1946	Vinson	0.427
1949	Clark	1.002	1990	O'Connor	0.961	1947	Vinson	0.569
1950	Clark	1.050	1991	O'Connor	0.533	1948	Vinson	0.864
1951	Clark	1.143	1992	O'Connor	0.677	1949	Vinson	1.072

1952	Clark	1.097	1993	O'Connor	0.849	1950	Vinson	1.180
1953	Clark	0.579	1994	O'Connor	0.637	1951	Vinson	1.386
1954	Clark	0.164	1995	O'Connor	0.672	1952	Vinson	1.301
1955	Clark	0.071	1996	O'Connor	0.788	1953	Warren	0.013
1956	Clark	0.257	1997	O'Connor	0.875	1954	Warren	−0.433
1957	Clark	0.606	1998	O'Connor	0.748	1955	Warren	−1.039
1958	Clark	0.540	1999	O'Connor	0.720	1956	Warren	−1.198
1959	Clark	0.429	2000	O'Connor	0.468	1957	Warren	−1.458
1960	Clark	0.782	2001	O'Connor	0.311	1958	Warren	−1.501
1961	Clark	0.407	2002	O'Connor	0.247	1959	Warren	−1.468
1962	Clark	0.207	1971	Powell	1.482	1960	Warren	−1.303
1963	Clark	0.183	1972	Powell	1.270	1961	Warren	−1.398
1964	Clark	0.020	1973	Powell	1.221	1962	Warren	−1.274
1965	Clark	−0.051	1974	Powell	1.117	1963	Warren	−1.216
1966	Clark	0.079	1975	Powell	0.938	1964	Warren	−1.000
1938	Douglas	−2.598	1976	Powell	0.703	1965	Warren	−1.083
1939	Douglas	−2.813	1977	Powell	0.443	1966	Warren	−1.156
1940	Douglas	−2.938	1978	Powell	0.784	1967	Warren	−1.157
1941	Douglas	−2.878	1979	Powell	0.787	1968	Warren	−1.166
1942	Douglas	−2.575	1980	Powell	0.803	1961	White	−0.033
1943	Douglas	−2.205	1981	Powell	0.873	1962	White	−0.031
1944	Douglas	−1.805	1982	Powell	1.074	1963	White	0.037
1945	Douglas	−1.632	1983	Powell	0.934	1964	White	−0.052
1946	Douglas	−1.351	1984	Powell	0.661	1965	White	−0.035
1947	Douglas	−1.464	1985	Powell	0.774	1966	White	0.120
1948	Douglas	−1.679	1986	Powell	0.742	1967	White	0.198
1949	Douglas	−1.530	1937	Reed	−0.959	1968	White	0.153
1950	Douglas	−1.400	1938	Reed	−1.057	1969	White	0.290
1951	Douglas	−1.594	1939	Reed	−0.978	1970	White	0.604
1952	Douglas	−2.247	1940	Reed	−0.609	1971	White	0.765
1953	Douglas	−2.843	1941	Reed	−0.222	1972	White	1.034
1954	Douglas	−3.429	1942	Reed	0.182	1973	White	0.587
1955	Douglas	−3.877	1943	Reed	0.034	1974	White	0.601
1956	Douglas	−4.260	1944	Reed	−0.197	1975	White	0.516
1957	Douglas	−4.546	1945	Reed	−0.004	1976	White	0.320
1958	Douglas	−4.767	1946	Reed	0.254	1977	White	−0.069
1959	Douglas	−4.905	1947	Reed	0.557	1978	White	−0.044
1960	Douglas	−5.024	1948	Reed	0.684	1979	White	0.145
1961	Douglas	−5.125	1949	Reed	1.050	1980	White	0.072
1962	Douglas	−5.211	1950	Reed	1.152	1981	White	0.021
1963	Douglas	−5.313	1951	Reed	1.184	1982	White	0.461
1964	Douglas	−5.472	1952	Reed	1.256	1983	White	0.738
1965	Douglas	−5.608	1953	Reed	1.436	1984	White	0.937
1966	Douglas	−5.731	1954	Reed	1.445	1985	White	1.149
1967	Douglas	−5.853	1955	Reed	1.042	1986	White	1.173
1968	Douglas	−5.964	1956	Reed	0.828	1987	White	0.931
1969	Douglas	−6.041	1971	Rehnquist	3.547	1988	White	1.006
1970	Douglas	−6.120	1972	Rehnquist	3.908	1989	White	0.779

1971	Douglas	−6.190	1973	Rehnquist	4.148	1990	White	0.539
1972	Douglas	−6.209	1974	Rehnquist	4.219	1991	White	0.510
1973	Douglas	−6.252	1975	Rehnquist	4.313	1992	White	0.497
1974	Douglas	−6.318	1976	Rehnquist	4.257	1956	Whittaker	1.013
1965	Fortas	−1.183	1977	Rehnquist	4.198	1957	Whittaker	1.047
1966	Fortas	−1.278	1978	Rehnquist	4.205	1958	Whittaker	1.346
1967	Fortas	−1.089	1979	Rehnquist	4.227	1959	Whittaker	1.456
1968	Fortas	−0.945	1980	Rehnquist	4.071	1960	Whittaker	1.271
1938	Frankfurter	−1.256	1981	Rehnquist	3.921	1961	Whittaker	1.197
1939	Frankfurter	−1.187	1982	Rehnquist	3.831			
1940	Frankfurter	−0.686	1983	Rehnquist	3.756			
1941	Frankfurter	0.101	1984	Rehnquist	3.571			