The concept of racial bloc voting plays a central role in judicial regulation of redistricting. For the past several decades, the definition and proof of this concept have depended on two premises: that nearly perfect information on voting patterns can be inexpensively obtained from so-called “ecological inference” techniques, and that polities can be conceptualized in biracial terms. In fact, however, neither premise has been true for some time, as the nation has become more multi-racial, and as allegations have increased that Caucasians vote less monolithically against minority-preferred candidates than in the past. In this article, I analyze these challenges to traditional understandings, paying particular attention to how the issue of racial bloc voting can be litigated well. I provide recommendations including greater reliance on more sophisticated statistical methods, an increase in the use of sample surveys, and a renewed receptivity to non-quantitative evidence on voting patterns, while clarifying that each of these recommendations comes at a substantial price.

With the arrival of the 2010 Census comes the decennial process of filtering our nation’s representative structure, particularly the redistricting process the Constitution compels, through the judiciary. Because the Supreme Court, specifically Justice Kennedy, remains unwilling to endorse a standard to govern claims of undue partisanship in the drawing of district lines, the primary litigation weapon for those seeking to alter or influence an officially adopted districting scheme will remain a lawsuit based on a theory of racial vote dilution. Speaking generally, vote dilution is the interaction of voting patterns, some aspect of a system of translating votes into political power (a districting scheme, for example), and the surrounding circumstances such that the strength wielded by some identifiable and salient group is less than what is thought to be the
right amount. When the group is defined by race, and when an acceptable remedy exists, Section 2 of the Voting Rights Act renders vote dilution illegal.

Election jurisprudence generally, and redistricting law in particular, has never been overly characterized by clarity or stability, and it seems unlikely that the 2010 round of redistricting will bring much of either. The dissatisfaction of a more conservative Supreme Court with law articulated in earlier decades is likely to be a major source of evolution in racial vote dilution jurisprudence, but an equal impetus to change may be questions as to whether altering circumstances on the ground have called into doubt the empirical foundations of this area. For at least the past 25 or so years, racial vote dilution litigation, particularly under Section 2, has rested on two premises. The first is that despite the secret ballot, litigants and courts could obtain nearly perfect numerical information about voting patterns of a jurisdiction’s racial groups relatively quickly, relatively cheaply, and for as far back historically as desired. It has been thought possible to accomplish this feat by examining Census data (usually) and precinct-level vote returns via a method of analysis called “ecological inference.”

The second premise is that courts and litigants could frame vote dilution litigation in biracial terms by comparing the preferences of the plaintiffs’ racial group (say, “black”) to those outside that group (so that, say, Greiner

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For convenience, except in footnote 20, I use the terms “race” and “racial” in this article as shorthands for either race or ethnicity. For similar reasons, I use the terms “Hispanic” and “Latino” interchangeably, as I do “Caucasian” and “white,” “African-American” and “black,” although I recognizes that none of the elements of these pairs are exactly synonymous.


7 This is so even if those who framed the relevant political system did not intend the injury. Thornburg v. Gingles, 478 U.S. 30 (1986).


10 The term “ecological inference” or “cross-level inference” refers to any attempt to gain information about relationships at one level from data aggregated to a higher level. See e.g., Christopher H. Achen & W. Phillips Shively, Cross-Level Inference (1995). For the purposes of this article, however, I will use the term to refer to methods that attempt to draw inferences about the behavior of voters from data aggregated to the level of a voting precinct, such as that available from official returns and that available by aggregating Census bloc data to a voting geographic unit such as a precinct. Note that “ecological inference” has nothing to do with ecology.

11 By “biracial” I mean the presence in a polity of only two relevant racial groups, not the presence in the polity of many persons who self-identify as belonging to more than one racial group.
“white” is the same thing as “non-black”). These two premises underlay the merger\textsuperscript{12} of doctrine and empirics\textsuperscript{13} contained in the phrase “racial bloc voting” (equivalently, “racially polarized voting”), which has been the “keystone”\textsuperscript{14} of vote dilution. Indeed, it is difficult to overstate the importance of racial bloc voting to the law and theory in this area, for whatever the phrase means, it defines the dilution injury under widely disparate accounts of voting and democracy,\textsuperscript{15} justifies entry into the “racial thicket”\textsuperscript{16} by a reluctant judiciary,\textsuperscript{17} and distinguishes official use of race in redistricting from official use of race in other settings.\textsuperscript{18}

Increasingly, however, the two premises identified above are no longer true. Actually, the first was never true, although in many areas of the nation where vote dilution lawsuits were brought, the consequences in a particular case of believing the fiction of nearly perfect information may have been minimal.\textsuperscript{19} Fewer fact situations fit this mold now, and in any event, both premises have come under pressure from two developments: the United States has become

\textsuperscript{12}Prior to Gingles, supra note 7, the concept of racial bloc voting had played a central role in the social science understanding of vote dilution, but its legal significance had been less clear. Samuel Issacharoff, Polarized Voting and the Political Process, 90 Mich. L. Rev. 1833, 1847 (1992). Lower courts often considered racial bloc voting in vote dilution challenges, Bernard Grofman, Expert Witness Testimony and the Evolution of Voting Rights Case Law, in, Controversies in Minority Voting 197, 199 & n.5 (Bernard Grofman & Chandler Davison eds. 1992), but few Supreme Court cases prior to Gingles mentioned the concept, and in part for this reason, the vote dilution cause of action remained undertheorized. Gingles adopted the social science conceptualization, and did so self-consciously, citing over a dozen articles from the social science literature. 478 U.S. at 46-52 & nn. 11, 13-15.

\textsuperscript{13}See Grofman, supra note 12, at 223 (“The history of the debate over racially polarized voting shows that there has been a complex interaction between social science terminology and legal definitions, to the point that it is virtually impossible to distinguish where the former leaves off and the latter begins.”).

\textsuperscript{14}United States v. Marengo County Comm’n, 731 F.2d 1546, 1554 (11th Cir. 1984).

\textsuperscript{15}See Issacharoff, supra note 12, at 1867-72, 1885-90 (showing how racial bloc voting undermines the fundamental assumptions of both process-based and social choice theories of democracy); Samuel Issacharoff, Groups and the Right to Vote, 44 Emory L.J. 869, 883-84 (1995) (demonstrating that a right to meaningful participation in the political process must include a focus on effective aggregation of ballots, which is what racial bloc voting can undermine); Heather K. Gerken, Understanding the Right to an Undiluted Vote, 114 Harv. L. Rev. 1663, 1667 (2001) (arguing that the right to an undiluted vote is an aggregate right threatened by racial bloc voting); Michael S. Kang, Race and Democratic Contestation, 117 Yale L. J. 734, 752-53 (2008) (clarifying that under a theory of “democratic contestation” racial bloc voting paralyzes the “political discourse” that would otherwise challenge citizens with “political choices about their political identity and sensibilities”).

\textsuperscript{16}Cf. Colgrove v. Green, 328 U.S. 549 (1946) (warning against judicial entry into the “political thicket” of adjudicating claims that legislative districts have unconstitutionally unequal population).

\textsuperscript{17}Issacharoff, supra note 12, at 1867-72.


\textsuperscript{19}See Richard L. Engstrom, Getting the Numbers Right: A Response to Wildgen, 22 Urb. L. 495, 495 (1990) (stating that in the litigation of lawsuits involving only two relevant racial groups (African-Americans and Caucasians), “documenting racially polarized voting is generally just beating the obvious”).
more multi-racial than before, and questions have arisen as to whether Caucasians vote against candidates of choice of minority groups as monolithically as they allegedly did before. Commentators have identified these changes previously, but few in academia or elsewhere have attempted to understand fully the challenges raised or to propose solutions, particularly with respect to the question of how to adjudicate whether voting is racially polarized. On the contrary, perhaps the most prominent expert witness in this field has recently argued that models needed to make sense of multiracial data do not exist (I respectfully disagree here).

In this paper, I analyze the problems identified above and begin the discussion on solutions. My aim is to propose a way forward on racial bloc voting, particularly the proof thereof, in light of changing circumstance. As I demonstrate, however, the way forward is not easy and requires difficult choices. To the extent possible, I attempt to stay within the existing legal framework, which I attempt to take as given to the extent possible. The merger of empirics and doctrine in this area, together with altering facts on the ground, does force me to confront the fact that case law gives the phrase “racial bloc voting” no clear meaning, and thus I do reluctantly propose a definition of this phrase. I remain, however, uncertain as to the extent to which definitional language, as opposed to the nature of the evidence courts find sufficient here, really matters.


21 For an excellent articulation of some of the definitional and doctrinal issues raised, see Melissa L. Saunders, Of Minority Representation, Multiple-Race Responses, and Melting Pots: Redistricting in the New America, 79 N.C. L. Rev. 1367, 1370-73 (2001); see also Guy-Urriel E. Charles, Race, Redistricting, and Representation, 68 Ohio St. L. J. 1185, 1211 (2007) (“[A] racial bloc voting decreases and as voters of color become more dispersed, Gingles will be harder and harder to apply”). On allegations of decreasing white bloc voting, see Charles S. Bullock, III and Richard E. Dunn, The Demise of Racial Districting and the Future of Black Representation, 48 Emory L. J. 1209 (1999); Richard H. Pildes, Is Voting-Rights Law Now at War with Itself? Social Science And Voting Rights in the 2000s, 80 N.C. L. Rev. 1517 (2002); Note, The Future of Majority-Minority Districts in Light of Declining Racially Polarized Voting, 116 Harv. L. Rev. 2208 (2002). Note that in citing these articles, I do necessarily not endorse the assertion that racially correlated voting is in fact declining, particularly with respect to local and municipal contests as opposed to the congressional (and, to a lesser extent, the state legislative) elections that tend to draw scholarly attention. Regarding biraciality, see Pildes, supra note 9, at 1147 (“The simplicity of this ‘bivariate’ conception of racially-polarized voting has long been a sore spot to critics of the Gingles approach.”).

22 Bernard Grofman was the plaintiffs’ expert in the district court litigation in Thornburg v. Gingles, see 401 U.S. at 53, and has testified in dozens of cases since then.

This article proceeds in four parts. In Part I, I briefly trace the legal evolution of the doctrine of racial bloc voting from its ascendency in Thornburg v. Gingles24 to the present day,25 focusing in particular on the nature of the evidence upon which courts have relied to adjudicate whether voting in a jurisdiction is racially polarized, and on the pressure differing strands of legal doctrine have placed on that evidence. While the source of evidence upon which courts have principally relied, so-called “ecological inference” techniques,26 has remained unchanged since at least 1986, judicial doctrine has been less static, and the direction of the case law is towards greater reliance on the increasingly untrue premises of cheap, quick, near-perfect information and biraciality identified above. These evolutionary directions are unsustainable.

In Part II, I show how and why changes in the United States polity, primarily increasing racial diversity and allegedly decreasing uniformity of white bloc voting, have put increasing pressure on empirical techniques in this area generally and especially on ecological inference methods. Modern advances, particularly a technique Kevin Quinn and I developed called the “GQ Model,” can alleviate some of this pressure, and thus it is critical in multi-racial polities that both courts and expert witnesses abandon older techniques in favor of modern counterparts. I conclude, however, that even modern ecological inference methods are not able to support reliable and precise inferences as to the voting preferences of certain racial groups in some multi-racial polities, given the possibility of declining white polarization. Until the statistical community creates production-ready ways to add other forms of quantitative information into the equations used,27 even cutting-edge techniques such as the GQ Model will only be able to tell us so much, and (if current trends continue) less and less as time progresses. Accordingly, we should ask ourselves whether other sources of information on racial bloc voting are available.

In Part III, I shift from the descriptive and the analytical to propose alterations to current doctrine and empirics; on the empirical side, I limit myself to recommending inferential techniques that I have personally implemented. Although by necessity I propose a doctrinal definition of racial bloc voting, I suggest that the critical issue is less the words used to define the phrase than the evidence used to adjudicate the issue. Empirically, my primary suggestion is that at least in polities involving more than two racial relevant racial groups, experts, litigators, and courts stand ready to lessen (perhaps eliminate) their reliance on ecological inference techniques in favor of other sources of information, principally surveys and non-quantitative evidence. My discussion includes a focus on the costs to this approach, which may be substantial. These costs are monetary, temporal, and jurisprudential. An example of a jurisprudential cost is that a shift to nonquantitative evidence may require courts to reverse the near extirpation of vote dilution litigation, an exsanguination accomplished by reducing proof of racial bloc voting to a strictly numerical inquiry and by taking advantage of Congress’ 1982 removal of the requirement that

25 Professor Issacharoff traces the pre-Gingles history of racial bloc voting in Issacharoff, supra note 12.
26 See supra note 10.
27 Efforts to create such production-ready methods are underway. See D. James Greiner & Kevin M. Quinn, Exit Polling and Racial Bloc Voting: Combining Individual-Level and R x C Ecological Data (under revise and resubmit) (available from author).
plaintiffs’ prove intentional discrimination on the part of state and/or local officials. Accordingly, where possible, I identify ways to reduce these costs (again, ways I have personally implemented).

To demonstrate the viability of my proposals, Part IV provides a short case study in the form of an analysis of voting patterns in the Boston City Council.

A final word on terminology: I have thus far used terms loosely, mirroring the looseness in judicial opinions. For the remainder of this article, I use the term “racially correlated voting” to refer to the factual existence of a pattern associating voter race and voter preference; as explained below, the nature and strength of the correlation needed to be legally relevant is uncertain. The (concededly awkward) phrase “racially caused voting” denotes voting patterns that are in some way caused by racial animus in the electorate; ordinarily, this is thought of as white voter animus against minority-preferred candidates (who are frequently of minority race).

I reserve the terms “racial bloc voting” and “racially polarized voting” to refer to the set of circumstances sufficient to trigger legal consequences in a vote dilution-based challenged to a districting scheme. As I explain in Part I, despite decades of experience with vote dilution litigation encompassing several Census-driven redistricting cycles, exactly what circumstances are sufficient and exactly what the legal consequences are triggered is uncertain.

I. Racial Bloc Voting from Gingles to the Present: How the Evolution Was Premised on Cheap, Near-Perfect, Biracial Information

A. Gingles And Questions

In Thornburg v. Gingles the Supreme Court abandoned a previously-employed, multifactored, single-stage inquiry into vote dilution, adopting instead a framework consisting of a prime facie case followed by a totality-of-circumstances analysis. A plaintiff challenging a

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28 This issue has been variously phrased as whether racial animus as opposed to interest group politics were causing racially disparate voting patterns, or whether race (of the voter or the candidate) not political party was “the reason for” such patterns, or whether minority voter cohesion was a defensive as opposed to a calculated move. Thornburg v. Gingles, supra note 2, at 83 (White, J., concurring) (“interest-group politics”); Black Political Task Force, supra note 16, at 298 ("causation"); Gingles, 478 U.S. at 100 (O’Connor, J., concurring) (“the reasons why”); LULAC v. Clements, 999 F.2d 831, 855-59 (5th Cir. 1993) (party not race); John O. Calmore, Race-Conscious Voting Rights and the New Demography in a Multiracing America, 79 N.C. L. Rev. 1253, 1273 (2001) (whether “black bloc voting is . . . the initial fire [or] the return fire”).

29 Thornburg was the Court’s first decision interpreting the 1982 amendments to Section 2; these amendments provided a statutory “results” test for vote dilution in place of a constitutional one that, the Supreme Court had held in City of Mobile v. Bolden, 446 U.S. 55 (1980), turned on whether officials creating the system of government under challenge (or the specific district lines) had done so with discriminatory intent.

30 Prior to Bolden, the statutory and constitutional standards regarding vote dilution were thought to be the same, and the leading cases interpreting this standard were Whitcomb v. Chavis, 403 U.S. 124 (1971) and White v. Register, 412 U.S. 755 (1973). These two cases had relied on a variety of factors in an attempt to distinguish illegal vote dilution from “mere political defeat at the polls,” factors the Fifth Circuit sought to list in usable form in Zimmer v. McKeithen, 485 F.2d 1297 (1973) (en banc).
districting scheme\textsuperscript{31} made out a preliminary case by proving the three now-familiar Gingles prerequisites, \textit{i.e.}, the existence of a geographically compact racial minority population numerous enough to constitute a majority in a single-membered district,\textsuperscript{32} political cohesiveness in the minority population, and white voting patterns that ordinarily defeated the minority’s candidates of choice.\textsuperscript{33} If a plaintiff proved the three prerequisites, a totality-of-circumstances stage followed, in which courts were to focus on a non-exhaustive list of factors listed in the Senate Report accompanying the passage of the 1982 amendments to Section 2\textsuperscript{34} with an eye to deciding whether members of the plaintiffs’ group had “less opportunity than other members of the electorate to participate in the political process and to elect representatives of their choice.”\textsuperscript{35} The second and third Gingles prerequisites came to be considered together under the rubric of racial bloc voting,\textsuperscript{36} and at the totality of circumstances stage, the extent of racial bloc voting played a central role as one of the two most important factors in deciding the ultimate question of whether the challenged electoral system diluted minority voting strength.\textsuperscript{37} Thus, racial bloc voting ascended to “the undisputed and unchallenged center of the Voting Rights Act.”\textsuperscript{38}

As Justice Brennan’s opinion for the Court in Gingles sought to provide a doctrinal roadmap for courts adjudicating vote dilution cases, it did so with an eye to the nature of the evidence upon which courts would rely to decide whether voting was racially polarized. In this regard, Justice Brennan made three moves important for this article. First, in a section of his opinion receiving only four votes, Justice Brennan sought to equate racially polarized voting with racially correlated voting,\textsuperscript{39} resisting any effort to include in inquiry into whether voting was racially caused.\textsuperscript{40}

\begin{thebibliography}{99}
\item Gingles involved multimembered districts; Growe v. Emison, 507 U.S. 25 (1993), extended the Gingles framework to challenges to single-member districting schemes.
\item \textsuperscript{32} 478 U.S. at 51 n.17. In fact, the Supreme Court’s preference for single-membered districts, particularly as part of a judicially imposed remedy, predated Gingles. See Chapman v. Meier, 420 U.S. 1, 18-20 (1975). And the Court has since decided that a “majority” really does mean a “majority,” see Bartlett v. Strickland, 129 S. Ct. 1231 (2009), although the Court has not yet said a majority of what, see infra note 103.
\item \textsuperscript{33} 478 U.S. at 49.
\item \textsuperscript{35} 42 U.S.C. § 1973(b).
\item \textsuperscript{36} See, e.g., Abrams v. Johnson, 521 US 74, 93 (1997) (equating “the second and third Gingles factors” with “the extent of racially polarized voting”).
\item \textsuperscript{37} 478 U.S. at 48 n.15.
\item \textsuperscript{38} Isacharoff, supra note 25, at 1851. Note that the California Voting Rights Act is modeled after Section 2, but the former expressly eliminates the first Gingles prerequisite as a threshold for liability (although the viability of a single-membered district may be considered at the remedial stage). Cal Elec. Code § 14028(c).
\item \textsuperscript{39} 478 U.S. at 61-74. See TAN 28, supra, for my use of these terms.
\item \textsuperscript{40} The California Voting Rights Act defines racially polarized voting exclusively in terms of racially correlated voting. Cal. Elec. Code 14026(c). It also provides that methods accepted in federal cases under Section 2 may be used in cases arising under the California Act.
\end{thebibliography}
Second, Justice Brennan’s discussion of the evidence supporting a finding of racial bloc voting in the North Carolina areas at issue was entirely numerical. Specifically, Justice Brennan relied exclusively on evidence from one of the plaintiffs’ experts, evidence derived from ecological inference techniques, regarding the percentages of black and white voters supporting black candidates, the point being that the former percentage was high and the latter low and that black candidates usually lost. This exclusively numerical focus created an apparent separation between quantitative evidence regarding voting patterns on the one hand and, on the other, a variety of other forms of evidence potentially informative about such patterns but now apparently relevant only at the totality of circumstances stage (e.g., the use of race-based campaign appeals). As explained below, courts have followed this near-exclusive focus on the numbers in adjudication Section 2 challenges to redistricting.

Third, Justice Brennan’s numerical discussion included the observation that the plaintiffs’ expert in the case had “subjected the data” to two particular ecological inference techniques called “extreme case” (or homogenous precincts) analysis and “ecological regression.” As I have detailed elsewhere, Brennan’s observation was read as an endorsement of these two ecological inference methods, which exercised a stranglehold on empirical proof in vote dilution litigation for the next decades, despite growing indications of their shortcomings and the emergence of superior methods.

B. Post-Gingles Questions And Trends

Several questions remained unanswered after Gingles, two of which concern the themes of this article because they demonstrate how the evolution of racial bloc voting doctrine has depended on the presumed availability of cheap, near-perfect information about voting patterns in a biracial polity. First, how much of the numerical focus in Justice Brennan’s discussion of the evidence supporting a finding of racial bloc voting penetrated the concept or definition of

41 This was so despite explicit district court findings (mentioned earlier in Gingles) that, for example, race-based campaign appeals had contributed to blacks’ inability to participate in the political process. 478 U.S. at 40.

42 478 U.S. at 53-54.

43 D. James Greiner, Ecological Inference in Voting Rights Act Disputes: Where Are We Now, And Where Do We Want To Be?, 47 Jurimetrics J. 115, 116-17 (2007).

44 Thus, Chief Justice Roberts noted, two decades after Gingles, proof of racial bloc voting “is typically done through regression analyses of past voting records.” LULAC v. Perry, 548 U. S. 399, 500 (2006) (Roberts, C.J., concurring in part and dissenting in part); see also Campos v. City of Baytown, 840 F.2d 1240, 1243 (5th Cir. 1988).

My reference to a “stranglehold” above refers to the fact that evidence from ecological regression and extreme case analysis constitutes the bulk not just of the statistical evidence of racial bloc voting but of all of such evidence. Courts have on occasion discussed testimony from elected officials regarding voting patterns, but the number of cases in which lay testimony is discussed, and the length of those discussions, pales in comparison to that from ecological inference. Compare Greiner, supra note 43, at 155-57, with id. at 120 n.20. Moreover, a research assistant and I, after reviewing the published redistricting opinions listed in See Ellen Katz et al., Documenting Discrimination in Voting: Judicial Findings Under Section 2 of the Voting Rights Act Since 1982, 39 U. Mich. J. L. Rev. 643 (2005), as well as subsequent cases, were unable to discover any instance of a court finding racial bloc voting to be present when the plaintiff did not present evidence from ecological regression or extreme case analysis. Note that courts have, for the most part, considered a third ecological inference technique, called “King’s EI,” only when it conforms with the results of regression and/or extreme case. See, e.g., United States v. Euclid, 580 F. Supp. 2d 584, 598 (N.D. Ohio 2008).
bloc voting? Specifically, could voting be deemed racially polarized when white support rates for minority-preferred candidates were in some numerical sense “high,” even if these “high” levels were ordinarily insufficient to allow minority candidates of choice to succeed? Second, what is the role of causation in the racial bloc voting inquiry? I briefly analyze the judiciary’s struggles with each question before demonstrating that all answers the courts have proposed place even greater pressure on the perfect-information and biraciality premises. I conclude with a brief word on anti-essentialism.

1. Correlations Versus Functionality

The first question concerns the extent to which racial bloc voting should be defined in numerical as opposed to functional terms; is a certain numerical level of white crossover voting (meaning white voter support for minority-preferred candidates) so “high” as to be inconsistent with a finding that voting is racially polarized, even if that “high” level is insufficient to allow minority-preferred candidates to succeed? The following hypothetical demonstrates how this might occur. Imagine an at-large system in a 100-person electorate with 80 white and 20 minority voters. 80% of minorities regularly support minority-preferred candidates, but so do 40% of whites. The 40% white crossover vote might seem “high,” implying in some sense “mild” polarization, but actually, the fact that 60% of whites regularly oppose minority-preferred candidates means that the latter will never win an election. The minority preferred candidates regularly receive 32 (.4 * 80) white votes plus 16 (.8 * 20) minority votes, for a total of 48, as opposed to the non-minority-preferred candidates, who regularly receive 48 (.6 * 80) plus 4 (.2 * 20) minority votes, for a total of 52. Thus, the “mild” white bloc voting is sufficient to induce regular defeat of minority-preferred candidates. This result obtains despite the fact that the minority-preferred candidates receive more (in fact, twice as many) votes from whites than they do from minorities.

Prior to Gingles, a debate had raged among expert witnesses concerning whether, to be legally relevant, the correlation between voter race and voter choice had to exceed numerically defined thresholds. For example, some experts testifying on behalf of official defendants had contended that racially correlated voting could not be deemed legally significant unless minority voter support rates for minority-preferred candidates ordinarily exceeded 80% and corresponding white voter support rates ordinarily fell below 20%. Note the biraciality inherent in such an argument. Lower courts mostly interpreted Justice Brennan’s opinion in Gingles as foreclosing

46 See infra note 54 for why I chose 40% white crossover voting as a “high” figure.
reliance on this kind of numerically defined threshold or rule of thumb. But some commentators did not, and there are signs that the Supreme Court might soon seek to engraft numerically defined thresholds or rules of thumb into the definition of racial bloc voting, thus reviving the arguments of pre-Gingles defendants’ experts.

Specifically, in Abrams v. Johnson, the Court deemed as evidence against the existence of racial bloc voting a lower court finding that “the average percentage of whites voting for black candidates across Georgia ranged from 22% to 38%, and the average percentage of blacks voting for white candidates ranged from 20% to 23%.” And last term, in Bartlett v. Strickland, despite the fact that a stipulation had removed the issue of racial bloc voting from the litigation, the oral argument was dominated by questions regarding the level of white crossover voting consistent with a finding of racial bloc voting, with no questions into the success of minority-


49 See Pildes, supra note 11, at 1563 (“The Supreme Court has not yet had to specify what precise levels of white support for minority-preferred candidates defines the boundary between polarized and nonpolarized voting.”). But see id. at 1565-66 (articulating a more functional view).


51 Id. at 92. It was hard to tell whether Abrams represented a shift in the Court’s treatment of the empirics of racial bloc voting because, at least according to Justice Kennedy, the record in the case also showed substantial success among black and black-preferred candidates, which was consistent with functionality. 521 U.S. at 92.

52 The Abrams court’s use of figures was odd, as the numbers suggested that black voters in that case generally opposed white candidates at a rate of around 80% (which, again, seems high) and that, apparently, a majority of white voters rarely if ever supported a black-preferred candidate. See, e.g., Milwaukee Branch of the NAACP v. Thomson, 116 F.3d 1194, 1198 (7th Cir. 1997) (Easterbrook, J.) (characterizing this level of white support for black candidates as allowing “not very many” such candidates to prevail). The Abrams figures regarding white voter support for black-preferred candidates were similar to those Justice Brennan appended to his opinion in Gingles to support the contention that voting was racially polarized. See 478 U.S. at 80-82 (showing white support rates for black candidates ranging from 10-50% with several values in the 40s).

53 The parties had stipulated that the third Gingles prerequisite had been met. Id. at 1240.
preferred candidates.\textsuperscript{54} The subsequent opinion, both by its own language\textsuperscript{55} and by its adoption of a bright-line rule regarding the first Gingles prerequisite,\textsuperscript{56} appeared to signal an inclination to deem racial bloc voting absent if the percentage of white voters supporting minority-preferred candidates exceeded certain numerical thresholds. Thus, the Supreme Court may be setting the foundation for the adoption of a rule (perhaps a rule of thumb) specifying that, for example, a 40% white crossover rate (perhaps some kind of “average” rate, although the kind of “average” that would be relevant here is difficult to pin down) forecloses a finding of racial bloc voting, and/or that a greater-than-20% minority crossover rate has the same consequence.

The trend toward a numerical limit or a rule of thumb turning on white crossover voting, if such exists, depends on the both of the premises identified above, \textit{i.e.}, the availability of near-perfect information about voting patterns and biraciality. Hard, or even presumptive, numerical thresholds cannot tolerate more than a scintilla of statistical uncertainty; what would a lower court working under such a threshold do when faced with an analysis showing that in a particular election, the fraction of Hispanics voters supporting a particular candidate was 95% likely to be


\begin{quote}
Justice Alito: We can't even say that 40 percent [crossover voting] would be sufficient in every instance, that that might be -- you know, that might not be enough?

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Justice Souter: Well, you don't suggest that if there were 40 percent white crossover voting, we would find white bloc voting within the Gingles condition, do you? Do you think that is a serious possibility?

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Justice Scalia [to counsel for North Carolina]: Do you have racially polarized voting when you have as high a crossover vote as 40 percent? I mean, you say, we apply the normal Gingles factors, but it seems to me 40 percent crossover is fairly high
\end{quote}

Chief Justice Roberts later suggested that 11% white cross over voting would be inconsistent with a finding that voting was racially polarized. \textit{Id.}

\textsuperscript{55} Justice Kennedy’s plurality opinion implied in dicta that a finding that 20% of white voters supported minority-preferred candidates would be inconsistent with a finding of racial bloc voting. 129 S. Ct. at 1244.

\textsuperscript{56} Specifically, the issue in Bartlett was whether Section 2 ever compelled a jurisdiction to draw a so-called “crossover” district, one that was less than 50% minority population but that nevertheless elected candidates of minority choice due to a high degree of cohesiveness in minority voting patterns and a small amount crossover voting (meaning voting for the minority-preferred candidate) by whites. The Court answered this question negatively, justifying its formalist “50%” rule for the first Gingles prerequisite with a desire for bright-line guidance in this area. \textit{Id.} at 1242.
What if relevant intervals were this wide in a series of elections? Moreover, what crossover numbers should a court examine in a multi-racial polity? If, per City of Boston examples discussed in Part IV, a black candidate runs against a white candidate, how does one conceptualize Hispanic “crossover,” and what support rate among Hispanic voters would be relevant? Further, suppose in a polity (such as the City of Boston) with four nontrivial racial groups, whites, Asians, blacks, and Hispanics all prefer candidates of their own race first, but when no candidate from their own group runs, each group’s preferences correlate with the combination of candidate races presented (e.g., white voters choose the black candidate when a black faces a Hispanic, etc.). Then, it may be that one group’s preferred candidates are consistently shut out of the process despite alternately receiving support from each of the other racial groups. Averaging in this kind of multi-racial, shifting-coalition setting could show support rates below any reasonable threshold even though every white voted the same as every other white, every black voted the same as every other black, etc. (meaning that voting is perfectly racially correlated).

Finally, matters become more difficult if voting is not in fact racially polarized. For technical reasons I have explored elsewhere, the degree of separation among racial groups’ voting preferences is related to how precisely those preferences can be estimated. In other words, if whites vote differently from blacks vote differently from Hispanics, the confidence intervals for all three groups usually narrow. So we have a better idea of how racial groups are voting if they have different preferences than we do if they have similar preferences. The connection here to allegations of a decrease in white bloc voting behavior is obvious, with the ultimate implication being that it becomes harder to distinguish two cases: (1) similarity of preferences among racial groups (meaning no racially correlated voting), and (2) lack of information about how racial groups are voting (meaning little information from standard estimation techniques).

In short, the questions posed in the previous paragraphs have no answers unless near-perfect information is available and unless the polity is essentially biracial. If these two premises break down, so must a reliance on numerical thresholds or rules of thumb.

2. Causation

57 This is the 95% posterior interval from the GQ Model (explained below) for the Hispanic voter support rate for Hilary Clinton in the City of Boston in the 2008 presidential primary.

Regarding the terms “point estimate” and “interval,” which are used throughout this paper: A point estimate may be thought of as a statistical technique’s best guess as to the value of some quantity of interest. Often, an analyst uses the mean or the median as a point estimate. Standing alone, a point estimate often of little use because it alone does not quantify how certain we are that the estimate is any good. There many ways to express uncertainty. One popular one is to provide an interval within which the true value is in some sense “likely” to fall. A commonly-used interval is a 95% interval, meaning that the interval is (in various philosophical senses that need not concern us here) 95% likely to contain the true value. The wider the 95% interval, the less we know about the quantity of interest.


The debate on the role of causation in the racial bloc voting inquiry has occurred primarily in the lower courts, who have discussed the issue at great length. These lower courts have picked up on language in Justice O’Connor’s opinion in Gingles endorsing a focus on the reasons for white voter rejection of minority-preferred candidates, as well as Justice White’s somewhat cryptic Gingles concurrence, which stated little more than that the race of the candidate was relevant to the racial bloc voting inquiry. Here, doctrinally, the lower courts have split on a variety of dimensions, including (i) whether evidence proving or refuting that voting is racially caused (as opposed to “merely” racially correlated) is relevant in vote dilution lawsuits; and (ii) whether, if relevant, the inquiry into causation should occur when a court adjudicates the Gingles prerequisites or the totality of the circumstances stage. These doctrinal disputes are important

60 See supra note 28 for my definition of the term “causation.”

61 Supreme Court indications on this question subsequent to Gingles have been difficult to interpret; to the extent interpretable, these indications suggest that the high court is skeptical of a role of racially caused voting in dilution litigation. Perhaps the clearest signal here is that in LULAC v. Perry, 548 U. S. 399 (2006), the Supreme Court found a Section 2 violation in Texas’ mid-decade congressional redistricting without mentioning or considering in any way the reasons for observed voting patterns. Also, in a case not related to redistricting, a plurality of the court commented that “proving what ultimately drives the electorate to choose a particular candidate is a difficult endeavor, not likely to lend itself to a certain conclusion.” Caperton v. A.T. Massey Coal Co., Inc., -- U.S. – (2009). Note that in both LULAC and Caperton, the court fractured, with the opinion for the Court written by Justice Kennedy.

62 Justice O’Connor suggested that the “reasons for” white voter rejection of candidates of minority choice were relevant to the overall vote dilution inquiry on the theory that other candidates “equally preferred by the minority group” might succeed if the reasons for the underlying white voter rejection did not apply to them. 478 U.S. at 100 (O’Connor, J., concurring).

63 478 U.S. at 82-83. Because Justice White abandon Justice Brennan when the latter sought to equate racially polarized voting with racially correlated voting, one can infer that Justice White thought that the race of the candidate was relevant specifically to the definition of racial bloc voting.

64 Some circuits say such evidence is relevant. Vecinos de Barrio Uno v. City of Holyoke, 72 F.3d 973 (1st Cir. 1995); Goosby v. Town Bd. of Town of Hempstead, N.Y., 180 F.3d 476 (2nd Cir. 1999); Lewis v. Alamance County, N.C., 99 F.3d 600 (4th Cir. 1996); LULAC v. Clements, 999 F.2d 831 (5th Cir. 1993) (en banc); Milwaukee Branch of the NAACP v. Thompson, 116 F.3d 1194 (7th Cir. 1997); Sanchez v. Colorado, 97 F.3d 1303 (10th Cir. 1996). Note that Sanchez is not 100% clear on this point. See 97 F.3d at 1313 (“perhaps”). One has held that causation is never relevant to vote dilution. Ruiz v. City of Santa Maria, 160 F.3d 543 (9th Cir. 1998); U.S. v. Blaine County, Mont., 363 F.3d 897 (9th Cir. 2004). Another has implied but not held the same. Jenkins v. Red Clay Consol. Sch. Dist. Bd. of Educ., 4 F.3d 1103 (3rd Cir. 1993). Another has definitively resolved the issue only in a plurality opinion. Nipper v. Smith, 39 F.3d 1494, 1515 (11th Cir. 1994) (en banc) (plurality opinion); see id. at 1547 (Hatchett, J., dissenting); see also Solomon v. Liberty County Com’rs, 221 F.3d 1218, 1225 (11th Cir. 2000) (apparently adopting view of the plurality opinion without discussion). Courts in two other circuits have found Section 2 violations in several cases without discussing the issue. Clarke v. City of Cincinnati, 40 F.3d 807 (6th Cir. 1994); Nixon v. Kent County, 76 F.3d 1381 (6th Cir. 1996) (en banc); Bone Shirt v. Hazeltime, 336 F. Supp. 2d 976 (D.S.D. 2004); Corbett v. Sullivan, 202 F. Supp. 2d 972 (E.D. Mo. 2002); Jeffers v. Clinton, 730 F. Supp. 196 (E.D. Ark. 1989). But see Jeffers, 730 F. Supp. at 243 (Eisele, C.J., concurring and dissenting).

65 For the position that such evidence is relevant at the prerequisite stage, see LULAC v. Clements, 999 F.2d 831, 855-59 (5th Cir. 1993); Barnett v. City of Chicago, 969 F. Supp. 1359 (N.D. Ill. 1997), aff’d in part and rev’d in part on other grounds, 141 F.3d 699 (7th Cir. 1998). For the totality of circumstances, see Vecinos de Barrio Uno v. City of Holyoke, 72 F.3d 973, 980 (1st Cir. 1995); Goosby v. Town Bd. of Town of Hempstead, N.Y., 180 F.3d 476, 493 (2nd Cir. 1999); Lewis v. Alamance County, 99 F.3d 600, 616 n.12 (4th Cir. 1996); NAACP v. Thompson, 116 F.3d 1194, 1199 (7th Cir. 1997).
for racial bloc voting, but equally important for the purposes of this article is the nature of the evidence upon which courts rely to adjudicate causation. Two points are particularly relevant. First, although judges continue to anticipate that quantitative evidence on causation, in the form of multivariate statistical inquiries, would emerge, in fact, none really has. This is in contrast to other civil rights litigation class action contexts, where statistical proof of causally defined harm is the norm. Second, once a plaintiff has proved racially correlated voting, the lower courts have typically placed the burden of disproving racial animus as the source of such patterns on the official defendant. Legally, this latter choice is hard to justify; none of the traditional indicators of an affirmative defense (e.g., defendant’s superior access to evidence, statutory language) would appear to support this choice.

In my view, the non-emergence of statistical techniques to tackle causation and the placement of the burden of persuasion on the defendant are related in that the lower courts appear to recognize implicitly that if they assigned the burden of proof to the plaintiff (as is true in other civil rights contexts) and took that burden seriously, no other issue in vote dilution litigation would be relevant, and no plaintiff would prevail. Nevertheless, there are reasons to believe that a focus on causation will continue to preoccupy courts. Justice O’Connor’s opinion

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66 If causation is relevant but only at the totality of the circumstances stage, then Section 2 plaintiffs will encounter the issue after receiving the benefit of a presumption that a party who proves the three Gingles prerequisites should ordinarily win the lawsuit. See, e.g., United States v. City of Euclid, 580 F. Supp. 2d 584 (N.D. Ohio 2008); Teague v. Attalla County, 92 F.3d 283, 293 (5th Cir. 1996); Clark v. Calhoun County, Miss., 21 F.3d 92, 97 (5th Cir. 1994); Jenkins v. Red Clay Consol. Sch. Dist. Bd. of Educ., 4 F.3d 1103, 1135 (3d Cir. 1993); NAACP v. City of Niagara Falls, N.Y., 65 F.3d 1002, 1019 n.21 (2d Cir. 1995). And in fact, cases in which a plaintiff proves the three Gingles prerequisites but fails to prevail at the totality of circumstances are rare. See Katz, supra note 44.


68 The primary form of evidence courts have considered on causation is the success of the success of minority candidates (ordinarily black Republicans), see, e.g., LULAC v. Clements, 999 F.2d 831 (5th Cir. 1993) (en banc). a factor the courts would have to consider anyway under the text of Section 2. 42 U.S.C. § 1973(b).

Occasionally, courts have also considered whether the white support rate for the Democratic candidate drops when the candidate is of minority race as opposed to a white. See, e.g., Charleston County, 365 F.3d at 350 (noting that voting polarization increased when a black candidate ran against a white candidate); Old Person v. Cooney, 230 F.3d 1113, 1128 (9th Cir. 2000). Such inquiries typically involve comparisons among different kinds of so-called “exogenous” elections (e.g., Presidential elections versus senatorial elections), and as such may be increasingly suspect in the modern era. See infra section II.E. There are rare situations in which a side-by-side comparisons of candidates of the same party but different race run for separate seats within the same official office. See Sam Hirsch, Unpacking Page v. Bartels: A Fresh Redistricting Paradigm Emerges in New Jersey, 1 Elec. L. J. 7, 21 (2002). Even here, however, using such comparisons for causal inference is suspect for reasons I discuss elsewhere. See D. James Greiner, Causal Inference in Civil Rights Litigation, 122 Harv. L. Rev. 533, 590-97 (2008).


in Gingles aside, recent hints in cases outside the voting rights context suggest that if interpreted as including no causal inquiry, Section 2’s constitutionality may be questioned.72

Finally, note that the first step in any quantitative evidence of causation would be near-perfect information regarding the voting preferences of different racial groups. Discerning what these patterns actually are would seem to be a prerequisite to explaining them. Moreover, any such inquiry will be more difficult in a multi-racial setting. Thus, the causation issue simmering in the lower courts depends on the two premises of near-perfect information and biraciality identified above.

3. A Short Note on Anti-Essentialism

I pause here to mention briefly the rise of anti-essentialism,73 a vote dilution principle that has not thus far penetrated racial bloc voting doctrine but which may do so soon.74 The anti-essentialism principle holds that governments may not act on the prohibited “assumption” that members of a racial group “share the same political interests[] and will prefer the same candidates at the polls.”75 On at least one account, this principle underlies the prohibition, stemming from Shaw v. Reno76 and its progeny, on the overuse of race in the districting process.77 The principle also provided the foundation for LULAC v. Perry’s78 engrafting of a “cultural compactness”79 requirement into the first Gingles prerequisite, the idea here being that minority group whose members are who are geographically dispersed (perhaps due to sparse population of any kind in the relevant area) and who are characterized by differences in socioeconomic indicia cannot be “compact” enough to warrant a judicially imposed single-membered district remedy.80

74 See Pildes, supra note 9, at 1147-48 (predicting that anti-essentialism would lead the judiciary toward “a more complex, multivariate approach to defining racial polarization”).
80 It is difficult to assess how critical the anti-essentialism principle will be to the further development of Section 2 jurisprudence. As noted above, see supra note 4, Shaw and its progeny did not serve as the backbone of many (if any) lawsuits in the 2000 redistricting round, probably because redistricters avoided drawing bizarrely shaped districts. And LULAC expressly limited its cultural compactness requirement to instances in which a minority population is both widely dispersed geographically and widely disparate socioeconomically. 548 U.S. at 435.

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I do not engage further with anti-essentialism in this article because, as noted above, my project is to articulate a way forward that (to the extent possible) is consistent with the legal framework as it currently exists, a framework the Court at least says that it is reluctant to abandon. As commentators have noted, the application of anti-essentialism to racial bloc voting results in one of two implications. The first is the triumph of theory over facts, in that no amount of actual proof that voters of the same race “share the same political interests[] and . . . prefer the same candidates at the polls” keeps this idea from constituting an “assumption,” and because this idea is an “assumption,” officials may not rely on it when drawing district lines. If that is true, then racial bloc voting and thus vote dilution can never be proved. The second possible implication is that a proof of racially polarized voting that relies on voting patterns will in future cases be necessary but not sufficient, with the additional evidence required perhaps taking the form of a showing that the relevant racial minority has similar levels of income, educational achievement, literacy, etc. If so, then the discussion in this article, which focuses on information about voting patterns, is still necessary to the future of racial bloc voting, but it also may not be sufficient.

II. The Empirics of Racial Bloc Voting (Herein Mostly of Ecological Inference)

The previous Part discussed how, beginning with Justice Brennan’s opinion in Gingles and continuing to the present, the doctrinal definition of racial bloc voting has depended on the twin premises of near-perfect information on racial voting patterns and biraciality, with recent trends suggesting still-greater dependency. This Part analyzes the empirical challenges these doctrinal moves have created in a nation characterized by an increasingly multi-racial polity and by allegations of reduced white voter polarization. Because courts have focused to such an extraordinary extent on ecological inference techniques, I focus much of my attention there as well. My purpose in this Part is not to suggest that ecological inference should no longer be attempted, nor to catalog every one of the statistical shortcomings of the various available techniques. Rather, my purpose is to demonstrate that modern circumstances, particularly an increasingly melting-pot United States polity, now challenge these technique in new ways. These challenges require the use of modern methods, such as the technique Kevin Quinn and I invented called the GQ Method. But given the inherent shortcomings of ecological inference,

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81 Bartlett, 129 S. Ct. at 1244.
82 See, e.g., Karlan, supra note 8, at 304.
84 One can see this tension at work in LULAC itself. To justify a finding that Latinos in west Texas met the three Gingles prerequisites, Justice Kennedy quoted with approval a district court finding that voting was racially polarized “throughout the State.” LULAC, at 427 (quoting Session, 298 F. Supp. 2d at 492-93). A few pages later, however, when holding that the borderland-to-Austin district failed to meet the first Gingles prerequisite, Justice Kennedy reduced the idea that voting was racially polarized to a “mathematical possibility.” Id. at 435.
85 For an extended, slightly dated, but still instructive debate on the pros and cons of ecological inference, see articles in Volume 15 of Evaluation Review, which is primarily dedicated to this subject.
shortcomings modern circumstances are rapidly exposing, we need to search for alternative sources of information, a subject I take up in Part III.

Section II.A provides an intuitive account of how ecological inference works and why it is an unusually fragile class of statistical methodology. Section II.B demonstrates intuitively why the presence of additional racial groups increases the fragility of the ecological inferences. Section II.C shows that forcing the construction of a “biracial” polity by dividing potential voters into members and non-members of the plaintiffs’ group is not a viable solution. Section II.D discusses the extent to which modern ecological inference methods can solve these problems; as suggested the above, the answer is partially, but not completely, and not enough over the long term. Section II.E articulates an additional empirical challenge unrelated to ecological inference, namely, the potentially decreasing amount of information in so-called “exogenous” contests. Section II.F solidifies the discussion with a short example.

A. How Ecological Inference Works (Intuitively) And Why It Is Inherently Fragile

As noted above, as relevant to vote dilution, ecological inference is the attempt to glean information about racial voting patterns by examining vote totals for each candidate at the precinct level along with a breakdown by race of the precinct voting age population (“VAP”). Thus, for example, we know (from the Census) the number of (say) African-Americans and Caucasians 18 years or older in a precinct, and we know (from vote returns) for any particular election the number of votes cast for (say) the Democrat and the Republican. What we need to know in order to figure out whether voting is racially correlated is the numbers of African-Americans voters who voted for the Democrat, who voted for the Republican, and who voted for no one (i.e., did not vote), and the same figures for Caucasians.

One can think of information of this kind as coming from two sources, the so-called “bounds” within a precinct and the associations across precincts. Regarding the first source, we know that within a particular precinct, we cannot have more African-Americans voting Democrat than we have African-Americans there. Thus, there are “bounds” for the quantities we are attempting to estimate; tighter bounds are better because they mean we have more information. Bounds are tighter in precincts that are dominated by one racial group; the intuition here is that if one racial group dominates (meaning constitutes, say, 90% or more of the precinct’s VAP), then the observed vote totals in that precinct can be safely attributed to that racial group alone, as

86 My discussion throughout this paper sacrifices mathematical rigor in favor of accessibility. Readers desiring a more rigorous treatment of the issues discussed are referred to the references in the footnotes, along with the following, which are listed in increasing order of technical sophistication: Bernard Grofman, A Primer on Racial Bloc Voting Analysis, in the Real Y2K Problem: Census 2000 Data and Redistricting Technology 43 (Nataniel Persily ed. 2000); Greiner supra note 43; and the collected works in New Methodological Strategies (Gary King et al. eds. 2004).

87 In certain jurisdictions, racial information is available on registered voters, or even on voters who enter polling booths.

88 Note that racially correlated voting is conceptualized in terms of what voters, not potential voters, do. See infra TAN 104.

there is no one else to speak of there. For this reason, strongly segregated housing patterns are helpful for ecological inference, a point to which I return below.

Regarding the second source of information, variation across precincts, the numbers may suggest an association between an increase in a racial group’s numbers with an increase in a candidate’s vote totals. For example, the data may show that, generally, precincts with larger black VAP generally have higher Democratic vote totals. From such a pattern, a statistical method attempts to infer that blacks are voting Democrat (but see below).

Older ecological inference methods typically use only one of these two sources of information. Both of the techniques identified in Justice Brennan’s Gingles opinion,90 “extreme case analysis”91 and “ecological regression,”92 are such single-source techniques. Extreme case analysis only uses information from the first source (the bounds), and because the bounds are usually tight only in precincts dominated by one racial group, it uses only these “extreme” precincts. That is why this technique must depend on the assumption that, say, white voters in all-white precincts support Democrats at exactly the same rate as white voters in mixed-race precincts.

Meanwhile, because ecological regression makes use only of the second source of information (associations across precincts), it can produce physically impossible estimates, such as that 115% of Hispanic voters supported the white candidate. Without the bounds to constrain the numbers, impossible results can (and often do) occur.93 An important point for the themes of this article is what courts and expert witnesses do in cases in which regression produces impossible results. The dominant practice is to change the output of the model to the nearest physically feasible number (100% in the example above), argue that the impossible number is strong evidence of a high degree of cohesion in the racial group at issue, and attribute the anomaly to “sampling error,” i.e., to chance.94 The last claim is made despite small estimated standard errors (if these are provided), suggesting that the impossible result is unlikely to be due to chance.95

With this in mind, one can see why statisticians might deem ecological inference methods so fragile, and why well-respected members of the statistical community believe that it should

90 See supra TAN 42 for the relevant discussion.
91 Also known as “homogenous precincts analysis.”
92 Also known as “Goodman” regression, or “BERA,” for “bivariate ecological regression analysis.” Note that the “bivariate” in this acronym is a sign of trouble, as it the “bi” part assumes only two racial groups in the polity.
93 Often, such physically impossible estimates are accompanied by “wonderful regression fits,” Christopher H. Achen & W. Phillips Shively, Cross Level Inference 74 (1995), corresponding to a high degree of statistical certainty that the “true” value is very close to, say, 115%.
94 See Greiner, supra note 43, at 132-33 & n.59; id. Appdx A (documenting the extent of this practice and noting a case in which an expert adjusted an estimate of -400% to 0).
95 Unfortunately, it appears that this practice of claiming that out-of-bounds estimates demonstrate extraordinary polarization remains alive and well. See, e.g., United States v. City of Euclid, 580 F. Supp. 2d 584, 598 n.17 (N.D. Ohio 2008).
never be attempted.\textsuperscript{96} Few jurisdictions have housing patterns so strongly segregated that most voters live in racially uniform precincts. With respect to the association of, say, increasing number of Hispanics with increasing number of votes for a black candidate (running against a white), we never know whether it really is the Hispanics that are voting for this black candidate. It might be that non-Hispanics in more Hispanic neighborhoods fool us by being more likely to vote for the black candidate than non-Hispanics in less Hispanic neighborhoods. The two cases are observationally equivalent,\textsuperscript{97} and I have encountered the deceptive situation in my research.\textsuperscript{98}

B. Why Additional Racial Groups Make Matters Difficult

The previous section explained intuitively how ecological inference techniques work as well as why they are so fragile as a general matter; particularly fragile are the two techniques Gingles mentioned, homogenous precincts and ecological regression. This section shows why these techniques are even more fragile when they are applied to multi-racial jurisdictions. The general theme here is simple: more racial groups mean more moving parts.

1. Within a Single Precinct

One way in which additional racial groups make inference more difficult is by making it harder for a model to figure out what is happening within a particular precinct. To see this, imagine first a precinct that has only three people of voting age in it, two white and one black. For a particular election, the secretary of state reports that for this precinct, one person voted Democrat and one person voted Republican. From that, we can tell that one person did not vote. The question is, how many different combinations of voter-race-voter-choice could give rise to these numbers? Three. The black person either voted Democrat, voted Republican, or did not vote. Because the two white people did whatever the black person did not (e.g., in the case where the black voted Democrat, then one white person had to vote Republican, and one had to not vote), there are only three possible combinations. The three possibilities are listed immediately below in chart form.

<table>
<thead>
<tr>
<th></th>
<th>Possible voter-race-voter-choice combinations</th>
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</thead>
<tbody>
<tr>
<td><strong>Case 1</strong></td>
<td>black-Dem White-Rep white-NoVote</td>
</tr>
<tr>
<td><strong>Case 2</strong></td>
<td>black-Rep White-Dem white-NoVote</td>
</tr>
<tr>
<td><strong>Case 3</strong></td>
<td>black-NoVote White-Dem white-Rep</td>
</tr>
</tbody>
</table>


\textsuperscript{97} This structural problem was first identified in one of the most famous papers in social science, in which a sociologist named W.H. Robinson showed that ecological inference techniques predicted that recent immigrants had higher literacy rates than indigenous populations in Europe, because at the country (group) level, countries with higher immigration rates had higher literacy rates. As Robinson recognized, the truth was that immigrants were disproportionately moving to more prosperous countries with higher literacy rates, a relationship the group-level data could not capture. W.H. Robinson, Ecological Correlation and the Behavior of Individuals, 15 Am. Soc. Rev. 351 (1950).

\textsuperscript{98} Greiner & Quinn, supra note 59, at 76.
Now suppose that there are, again, three people of voting age in a precinct, but this time, there is one black, one Hispanic, and one white. As before, the secretary of state reports that for this precinct, one person voted Democrat and one voted Republican, meaning one did not vote. How many different voter-race-voter-choice combinations could give rise to these numbers? Six. Suppose the black person voted Democrat. Then either (1) the Hispanic voted Republican and the white did not vote, or (2) the Hispanic did not vote and the white voted Republican.

Now suppose the black person voted Republican. Then either (3) the Hispanic voted Democrat and the white did not vote, or (4) the Hispanic did not vote and the white voted Democrat. Etc. The six possibilities are listed below.

<table>
<thead>
<tr>
<th>Possible voter-race-voter-choice combinations</th>
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<tbody>
<tr>
<td><strong>Case 1</strong></td>
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<tr>
<td><strong>Case 2</strong></td>
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<td><strong>Case 3</strong></td>
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<td><strong>Case 4</strong></td>
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<td><strong>Case 5</strong></td>
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<tr>
<td><strong>Case 6</strong></td>
</tr>
</tbody>
</table>

Note that in this second example, there are the same number of persons and the voting behavior distribution as there were in the first example. The only thing different is an additional racial group. But that makes for additional moving pieces, which means more and harder work for a statistical model.

2. Across Precincts

Another way in which additional racial groups make inference more difficult is by making it harder for a model to figure out what is happening across precincts. To see why, consider a first set of two precincts, in which there are only two racial groups of interest. Information from the Census Bureau and the secretary of state suggests that for a particular election, the two precincts’ numbers are as follows:

<table>
<thead>
<tr>
<th>Multiple Precincts, Two Racial Groups</th>
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<tbody>
<tr>
<td><strong>Precinct 1</strong></td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td><strong>Precinct 2</strong></td>
</tr>
</tbody>
</table>

What might a statistical model do with this information? As explained above, it might “notice” the fact that as the number of blacks went up (from 20 in Precinct 1 to 30 in Precinct 2), so did the number of Democrats (from 5 in Precinct 1 to 10 in Precinct 2). The model might then
associate these two events to predict that blacks are voting Democratic. Notice that here, the model could also associate a decrease in the number of whites (from 25 in Precinct 1 to 15 in Precinct 1) with a decrease in the number of Republicans (10 in Precinct 1 to 5 in Precinct 2), and guess that whites are voting Republican.

Now consider a second set of two precincts, this one with three racial groups.

Multiple Precincts, Three Racial Groups

<table>
<thead>
<tr>
<th></th>
<th>blacks</th>
<th>Hispanics</th>
<th>Whites</th>
<th>Democrats</th>
<th>Republicans</th>
<th>NoVote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precinct 1</td>
<td>10</td>
<td>10</td>
<td>25</td>
<td>5</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Precinct 2</td>
<td>17</td>
<td>13</td>
<td>15</td>
<td>10</td>
<td>5</td>
<td>30</td>
</tr>
</tbody>
</table>

Here, a model might still associate a decrease in the number of whites (from 25 in Precinct 1 to 15 in Precinct 1) with a decrease in the number of Republicans (10 in Precinct 1 to 5 in Precinct 2), and guess as it did before that whites are voting Republican. But with which race should a model associate an increase in the number of Democrats from Precinct 1 to Precinct 2? Both blacks and Hispanics increased in number from Precinct 1 to Precinct 2, and thus it is now difficult for the model to “attribute” the increase in Democratic votes to one or the other. Again, there are more moving pieces.

3. Other Complications (Especially Housing Patterns And Turnout)

Other factors commonly (although not necessarily) associated with additional racial groups make ecological inference more difficult. Two deserve special attention: housing segregation and turnout. As discussed above, the degree of segregation in housing patterns critically affects the narrowness of the bounds; the more segregated housing patterns, the narrower the bounds, and thus the more information available. Speaking very generally, housing segregation as between African-Americans and whites has historically, and continues to be, greater than housing segregation among Hispanics and the other two groups, and as among Asians and the other three groups, particularly in urban areas. This could be good or bad for race-relations, but it is definitely bad for ecological inference. Thus, once again, three (blacks, whites, and Hispanics) are ordinarily worse than two, four (blacks, whites, Hispanics, and Asians) are ordinarily worse than three.

The critical role of turnout becomes clear when one realizes that in vote dilution cases, racial voting patterns have long been analyzed by reference to actual, as opposed to potential,

99 See supra TAN 97 regarding the fact that the model does not know that the “additional” blacks in Precinct 2 are the ones actually providing the “additional” Democratic votes; it could be that white people in the more minority Precinct 2 are more liberal and thus lean Democratic more than do the white people in Precinct 1.


voters. To make the difference clear: If there are 100 black citizens of voting age in a polity, and in a particular election, 70 do not vote, 25 vote for the Democrat, and 5 vote for the Republican, then the relevant figure for bloc voting purposes is ordinarily considered to be 83% (25 black votes for the Democrat divided by 30 total black votes). With this realization, it is intuitively clear that if a group’s turnout is high, it is easier to estimate the behavior of its voters: if more people vote, there is more information about the preferences of voters. And it is well-known that, in general, turnout among Hispanics and Asians is frequently lower than that of whites and African-Americans, in part (but not entirely) because of lower citizenship rates among the two former groups. Again, the presence of additional racial groups increases the challenge for ecological inference.

C. A Non-Solution: Biraciality by Construction

One might think that if ecological inference techniques ordinarily work less well if there are more than two racial groups, we could force the issue simply by dividing the polity into the racial group that is represented by the plaintiffs in the lawsuit versus “everyone else.” To do so, we must put aside lawsuits in which members of more than one racial group sue, but allow this for now. It appears that many expert witnesses and lower courts have adopted the practice of

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102 The Supreme Court has never clarified whether, for purposes of district-drawing, total population, voting age population (VAP), or citizen voting age population (CVAP), or eligible CVAP (which would not include disenfranchised felons), or registered voters is relevant in vote dilution litigation. Johnson v. De Grandy, 512 U.S. 997, 1017-21 & n. 14 (1994)) (reserving the question); see also, e.g., Farrakhan v. Washington, 359 F.3d 1116 (9th Cir. 2004) (Kozinski, J., dissenting from denial of motion for rehearing en banc) (collecting cases on felon disenfranchisement in the Section 2 context). Citizenship is not included in the Census short form, and thus precinct-level information about CVAP must come from an estimation process that used to depend on the Census long form but now depends on the American Community Survey. The reliability of such estimates at the precinct level in, say, municipal jurisdictions remains a concern. Further, CVAP information will not be available to line-drawers in time for the redistricting after the 2010 Census. For an outstanding discussion of these concerns, see Brief for Nathaniel Persily, Bernard Grofman, Bruce Cain, Theodore Arrington, and Lisa Handley as Amici Curiae in Support of Neither Party in No. 07-689, Bartlett v. Strickland.


104 For example, according to the Current Population Survey, in the United States in 2008, 64.8% of non-Hispanic whites of voting age voted, as did 60.8% of blacks. The corresponding figures for Hispanics and Asians were 31.6% and 32.1%. Using citizen voting age population as the denominator, the corresponding figures were white: 73.5%, black: 69.7%, Hispanic: 59.4%, Asian: 55.3%. See http://www.census.gov/population/www/socdemo/voting/cps2008.html (Table 4b) (last visited August 11, 2009).

105 Some additional factors that can matter here include how cohesive each racial group’s voting pattern is (the more cohesive the better for ecological inference, see supra TAN 59), how different each racial groups voting pattern is from the other racial groups (the bigger the difference the better), how much precinct sizes vary (certain models handle varying precinct sizes better than others, and extremely large precincts tend to mask racial differences), and how many precincts there are (the more precincts the better for inference). Greiner & Quinn, supra note 98, at 74-76. The first of these additional factor, cohesiveness, implicates the issue of whether whites voting is less monolithic than before; if so, inference is more difficult.
collapsing groups other than the plaintiffs' into "everyone else,"106 and the California Voting Rights Act even incorporates collapsing into the definition of racially polarized voting.107 Certainly, there is a point at which a racial group’s numbers or participation rates are so low that its preferences are irrelevant to a bloc voting inquiry.

In general, however, once a racial group’s numbers surpass a certain threshold (the threshold depends on the nature of the voting system under analysis, but is lower than instinct might suggest), collapsing differing racial groups into the plaintiffs’ class versus everyone else is unwise, for several reasons. The first reason goes to liability: to the extent we assess polarization in part by a difference in support rates for particular candidates among the plaintiffs’ class and the non-plaintiffs’ class, we risk serious misinformation if the nonplaintiffs’ class is a mixture of groups with disparate voting patterns. This was a thrust of section I.B.1 of this article.108 The second reason is technical: it turns out that forcing a two-group division can make an ecological inference technique give the wrong answer, even for the plaintiffs’ group (which has not been combined with anyone else).109 Although the reasons for this fact are too technical to explore in this setting, one can obtain some intuition by asking whether one might predict different voting behavior among Hispanics in a precinct depending on whether the non-Hispanics living there are predominantly white or predominantly black.

The third reason concerns remedy: supposing that collapsing into plaintiffs’ versus non-plaintiffs groups had allowed us to obtain proper estimates for the plaintiffs’ group, we may still need to know something about the preferences of each of the groups separately in order to assess the viability of a remedy. Even assuming a continued regime in which the only available, court-ordered remedy in a vote dilution case is a single-membered, majority-minority district,110 courts still inquire whether the remedial district will “perform” in the sense of providing an opportunity to the plaintiffs’ class to elect its candidates of choice. That inquiry can depend on the turnout

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108 Multiple racial groups can be important to liability in other ways: Consider this example: in an at-large election without numbered slots and with no anti-single-shot voting provision (such as is characteristic of the four of the seats on the Boston City Council), voters can engaged in so-called “bullet voting,” meaning that a voter can select only one candidate despite having the legal right to cast a ballot for more than one. It is therefore easy to see that prospects for a candidate of choice of one racial group, say, Hispanics, might depend on whether the members of another racial group say, Asians, engage in bullet voting when both an Asian and a Hispanic are on the at-large ballot (as opposed to when no Asian is running). Therefore, collapsing a polity into (say) Hispanic versus non-Hispanic risks distortion.


110 See supra note 32 and accompanying text.
rates and preferences of the disparate non-members of the plaintiffs’ class placed in a remedial district.\textsuperscript{111}

An example may help to clarify this third reason: To make up for line-drawing elsewhere, the Tom-Delay-engineered mid-decade congressional redistricting plan passed by the Texas legislature in 2003 included a new, border-to-Austin congressional district that was 64% Hispanic VAP. In early January of 2004, a three-judge panel found that in this district, “Latino voters will likely control every primary and general election outcome.”\textsuperscript{112} Not so. In the subsequent, 2004 congressional Democratic primary,\textsuperscript{113} Caucasian Lloyd Doggett defeated Latina Leticia Hinojosa despite the fact that Doggett lost the Latino vote by over ten points. One key to Doggett’s victory was the (comparatively) high turnout of African-American voters in the primary (relative to both whites and Latinos), who overwhelmingly supported him. To have performed as the three-judge panel expected, this district needed to have included more Latinos, but how many more depended on whether the non-Latino population in the neighborhoods substituted into the district was predominantly white or black.\textsuperscript{114}

D. What Modern Techniques (Including the GQ Method) Can And Cannot Do

How many of the problems articulated in the previous sections can modern\textsuperscript{115} ecological inference techniques solve? Some, but not all; enough for ecological inference methods to

\textsuperscript{111} When courts recognize differential turnout rates among a plaintiff class and the remainder of the polity, they may attempt to draw districts with minority VAPs substantially higher than 50%. See, e.g. United States v. City of Euclid, 523 F. Supp. 2d 641, 645 (N.D. Ohio) (60%); see also African Am. Voting Rights Legal Def. Fund, Inc. v. Villa, 54 F.3d 1345, 1348 n.4 (8th Cir. 1995).

Note that what are sometimes called “reconstituted elections” can address some of these issues, but not all. Reconstituted elections consists of looking at federal, statewide, or in some cases countywide contests as run in precincts in a district of interest. The issue is that, as noted section II.E, infra, statewide may involve substantially different dynamics than do the local contests often at issue in Section 2 lawsuits, and that may be that voting is racially polarized at one level of government but not another. If so, then the reconstituted elections may mislead.


\textsuperscript{113} This was the only congressional election run in the relevant district before the Supreme Court essentially (although not formally) ruled it invalid in LULAC v. Perry, 548 U.S. 399 (2006).

\textsuperscript{114} The relevant 95% posterior intervals from the GQ Method are as follows. For Latino, white, and black voter support rates for Doggett, (.43, .46), (.88, .96), and (.96, .99). For Latino, white, and black turnout in this primary, the 95% posterior intervals were (.13, .14), (.12, .15), and (.16, .24). Point estimates for all of these quantities were centered at approximately the middle of these intervals. Regarding the terms “point estimates” and “intervals,” see supra note 57. All quantities are on the basis of VAP (not CVAP).

The data for this analysis came from Texas Legislative Council’s website, ftp://ftpgis1.tlc.state.tx.us/elections/, as well as from a file of precinct-level demographic information that the TLC was kind enough to provide via email. The quantitative results come from the GQ Model, discussed infra TANs 146-147.

\textsuperscript{115} My criterion for deeming an ecological inference technique “modern” is that it is structured so that it can readily handle analyses of more than two racial groups in a way that produces coherent estimates of uncertainty in the statistical process. For this reason, I do not consider a technique that has gained some popularity among expert witnesses, called “King’s EI”, modern. See Gary King, A Solution To the Ecological Inference Problem (1997) (proposing the technique); Greiner, supra note 43, at 138-43 (explaining why extension of this technique to multi-racial contexts is uncertain). I note that Professor King was one of a group of authors to propose a technique that does fit my definition of “modern.” See infra note 120.

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handle some challenges, but not enough to allow them to serve indefinitely the role they have served in the past, i.e., as the primary source of evidence regarding racial bloc voting in vote dilution disputes. First, the good news: at an important price (discussed below), modern methods are available that can analyze any single-vote electoral contest featuring any number of candidates and any number of relevant racial groups. Some of these methods never produce physically impossible estimates of voting behavior, and others do so only rarely. Some produce legitimate, statistically defensible estimates of uncertainty, allowing the formation of valid intervals, and by doing so, they flag for the user situations in which no inference is possible (ordinarily by producing extremely wide intervals). Two of these methods have been programmed into publicly-available freeware in a popular statistical programming environment. One of these two, the GQ Model referred to above, has been validated pursuant to accepted methods for testing statistical software, and it shares all of the desirable characteristics identified above. It uses both of the sources of information identified in section II.A (i.e., the bounds as well as across-precinct associations). The GQ Model and software have other advantages, including the ability to incorporate alternative sources of information, such as from exit polls or from prior beliefs; it also corresponds to a theory of voting at the level of the individual voter, which potentially makes it easier to explain to a lay audience.

The important price to be paid for most of these modern methods is either time or an increase in the level of computational complexity in the analysis. In its current incarnation, a particular challenge is whether the any method can tackle contests in which each voter can cast more than one vote for a group of candidates, i.e. in an at-large election system without slotted seats such as the one used for the Boston City Council. The problem is more difficult that it might appear at first blush because there is an additional, hard-to-model aspect of voting behavior that we do not observe, namely, the number of votes each voter casts. In my view, as demonstrated in Part III, it may be best to retreat to simplicity in this situation by using correlation coefficients and other blunt measures. Under the present state of statistical development, regression in the at-large setting appears even more than usually fraught with peril here. See Bernard Grofman & Michael Migalski, Estimating the Extent of Racially Polarized Voting in Multicandidate Contests, 16 Soc. Meth. & Res. 427 (1988); Jeffrey S. Zax, Comment on “Estimating the Extent of Racially Polarized Voting in Multicandidate Contests” by Bernard Grofman and Michael Migalski, 31 Soc. Meth. & Res. 75 (2002); Zax, supra note 47; Grofman & Barreto, supra note 23.

On this point, I do not agree with Grofman & Barreto, supra note 23, when they assert that no models to analyze so-called “R x C” situations are currently available.

In addition to the two methods discussed immediately below, see, e.g., George C. Judge et al., An Information Theoretic Approach to Ecological Estimation and Inference, in Ecological Inference: New Methodological Strategies 162 (Gary King et al. eds. 2004).

The statistical environment is called R, available for free download at http://www.r-project.org/. The relevant package names are eiPack and RxCEcolInf. eiPack programs the model proposed in Ori Rosen et al., Bayesian and Frequentist Inference for Ecological Inference: The R x C Case, 55 Statistica Neerlandica 134 (2001). See below immediately below for RxCEcolInf.

Kevin Quinn and I created the method, and we programmed it with Paul Baines.

We proposed the GQ Model in Greiner & Quinn, supra note 106. Computer code to run the model is contained in the R package RxCEcolInf, available from the R website, http://www.r-project.org. Regarding software validation, we followed the method in Samantha R. Cook et al., Validation of Software for Bayesian Models Using Posterior Quantiles 15 J. Comp. & Graph. Stat. 675 (2006).

We are actively pursing methods to reduce the time needed to run the GQ Model.
the GQ Model, for example, takes on the order of two-three hours to analyze an election in a jurisdiction the size of a typical congressional district using a typical laptop or desktop computer. Regressions, in contrast, can be run in seconds. Speed concerns need not be an insurmountable obstacle if an expert uses one of the increasing number of computer grids available across the country, some of which are becoming available for free to certain users, that allow her to analyze dozens of datasets in parallel. For example, using the Crimson Grid at the Harvard University Department of Engineering, analysis of 50 statewide datasets as run in Pender and New Hanover Counties in North Carolina (the counties at issue in Bartlett v. Stevenson) using the GQ Model took a couple of days, once the data had been fully formatted. Similarly, using the same resource, analysis of 75 datasets from Texas statewide elections as run in Texas Congressional District 24 as it existed at the time of LULAC v. Perry took about three days (again after data formatting). Such grids could be necessary if an expert is to produce a report within the time frame of, say, 1-3 weeks, which (I know from personal experience) in some litigation occurring after a Decennial Census can be the amount of time experts are given to conform to a compressed litigation schedule in a redistricting case.

But one cannot get blood from a turnip; if the numbers have little information, ecological inference methods will fail to produce useful estimates. Or, they should fail to produce useful estimates. An advantage of most modern techniques, including the GQ Method, is that they will warn the expert that the data have little or no information about a racial group’s preferences in a particular election by providing extremely wide intervals for quantities of interest (see immediately below for an example). That is a substantial improvement over ecological regression, which can fool the expert into thinking that nothing is wrong in such a situation, particularly if she is inclined to “adjust” physically impossible results to 0% or 100%, whichever is nearest. But having discovered that the numbers have little information, we can do little about this fact at present. And as the previous sections have detailed, the numbers have less information in an increasingly common set of situations.

E. An Additional Empirical Challenges Not Directly Related to Ecological Inference


125 See http://community.crimsongrid.harvard.edu/. My thanks to Jayanta Sircar and his staff for allowing me to use the Crimson Grid gratis.

126 129 S. Ct. 1231 (2009).

127 What determines time here is less the number of datasets one wants to analyze than the number of other users on the grid.

128 See Hirsch, supra note 68, at 13 (“The parties had 6½ days to prepare for trial.”).

129 See supra TANs 94-95.

130 As mentioned above, see supra note 27, efforts are underway to change this situation.
Changing facts on the ground, facts related to the continuing emergence of multiple racial groups and the possibility of less monolithic patterns among white voters, have made racial bloc voting an inherently more difficult concept in ways the litigation system has yet to internalize fully, separate and apart from the difficulties inherent in ecological inference. I discuss one way in which such difficulties have emerged: the possibility that racial bloc voting exists in a jurisdiction with respect to one level of government but not another.

Bloc voting is ordinarily thought of as a characteristic of the voters in a particular area, something that “rarely stops at electoral boundaries.” For this reason, courts routinely consider what they call “exogenous” elections, i.e., elections for offices other than the particular office at issue in the litigation, to decide whether voting is racially polarized, although they typically weight the results of analysis of exogenous elections less heavily than those of “endogenous” ones. There are growing indications, however, that voting can be racially polarized in a geographical area with respect to one level of office but not polarized in the same geographical area with respect to another set.

The City of Boston provides an example. In 2004, a federal district court found that African-American plaintiffs had shown that voting in the Massachusetts House of Representative districts covering the Boston area was racially polarized. Further, no African-American candidate won an at-large contest in the Boston City Council from 1991 to 2007. In 2006 and 2008, however, African-American candidates of choice defeated white candidates in the Democratic gubernatorial and presidential primaries, winning 59% and 54% of the votes cast. Black, white, and (to the extent possible to say, see below) Hispanic voter support rates were quite different, but high black voter support for Duval Patrick and Barack Obama overwhelmed

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132 See, e.g., Westwego Citizens for a Better Gov’t v.City of Westwego, 872 F.2d 1201, 1209 n.11 (5th Cir. 1989); Askew v. City of Rome, 127 F.3d 1355, 1381 n.13 (11th Cir. 1997); Cano v. Davis, 211 F. Supp. 2d 1208, 1235 (C.D. Cal. 2002) (three-judge court).

133 For another example: In a 1993, the Fifth Circuit rejected a vote dilution claim by black and Hispanic voters challenging at-large (in each county) election of Texas trial judges on the grounds that the plaintiffs had not proved that voting in the relevant areas, which subsumed all of Texas’ major urban centers and thus a large percentage of its non-white population, was racially polarized. LULAC v. Clements, 999 F.2d 831 (5th Cir. 1993) (en banc). (On the counties covered, see id. at 837 n.1.) Both before and after this finding, however, three-judge courts found voting racially polarized in Texas congressional elections “throughout the state.” Session v. Perry, 298 F. Supp. 2d 451, 494 (E.D. Tex. 2004); Terrazas v. Slagle, 789 F. Supp. 828, 833 (W.D. Tex. 1991).


135 Interview with KenCooper on August 27, 2009 (notes of interview available from author).
less-than-monolithic opposition among white voters and perhaps stronger opposition among Hispanics to deliver wins for Patrick and Obama among Boston voters.  

It is not particularly difficult to articulate how this can happen: turnout and “roll-off” patterns among racial groups vary by level of government. For example, in Boston, City Council contests are held in odd-numbered years, and the electorate in municipal elections in Boston has been whiter and more conservative than that in statewides. What this demonstrates, however, is that less monolithic white bloc voting in federal and statewide elections need not (and in some cases, does not) translate into similar patterns at other levels of government.

If all of this is true, there are at least two implications: first, the judicial practice of mining exogenous contests for information about voting patterns has become increasingly harder to justify in a modern era characterized by the potential for less monolithic white bloc voting in certain contests but, perhaps, not others, with part of the difference potentially depending on

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136 See infra notes 143-151 for a discussion of these figures and the sources for them. Note that in implying that voting was not racially polarized in these election, I am making a statement specific to African-Americans only. As discussed infra, both elections may well provide evidence that voting was racially polarized with respect to Hispanic voters.

There are alternative explanations for the Boston phenomenon. For instance, perhaps both Patrick and Obama were members of a new generation of African-American leaders characterized by a conciliatory style on racial issues, in contrast to the older, more firebrand politics of leaders who came of age during the Civil Rights Era. See Ronald Sullivan, Soul Brother Number One, chapter in Barack Obama and the Eclipse of Black Charismatic Leadership (forthcoming, chapter on file with author) (contrasting the “blackness” of Barack Obama to that of “Gray Beards” of the civil rights movement); Kenneth J. Cooper, Young, Black, and in the Running, The Boston Globe Magazine (July 19, 2009), available at http://www.boston.com/bostonglobe/magazine/articles/2009/07/19/young_black_and_in_the_running/ (last visited Nov. 29, 2009). Such an explanation would raise the question of why no such leaders emerged (until perhaps this year, see below) in the City of Boston to contend for at-large seats or for the mayor’s office. A second question might be whether the type of leadership style that can be successful is narrower for an African-American candidate than, say, a Caucasian candidate. This latter question is as hard to ask well as it is to answer because it implicitly assumes a counterfactual (e.g., what would leadership styles would have been available to Duval Patrick had he been white?) that, in my view, is poorly defined. See generally Greiner, supra note 68.

137 “Roll-off” occurs when voters vote only in high-profile contests at the top a ballot but do not vote in lower-profile state and municipal elections.


139 See Pildes, supra note 21, at 1530-1531, for a summary of some bloc voting studies documenting a decrease in monolithic white bloc voting, all of which focus primarily on contests at the congressional level.

140 A third implication is that the use of so-called “reconstituted elections,” see supra note 112, to assess voting patterns by race may be increasingly suspect, as the elections providing the data for this technique are typically exogenous.
turnout patterns in the various contests. Second, if exogenous elections provide little (or, worse, misleading) information in the modern era, then we have fewer contests with which to assess whether racial bloc voting is present via ecological inference techniques. We need alternative sources of information.

F. An Example

An example clarifies many of the principles discussed above, particularly the difficulties raised by more than two racial groups. Consider the 2006 Democratic Massachusetts gubernatorial primary as run in City of Boston precincts. In this contest, African-American Duval Patrick faced two white candidates, Christopher Gabrieli and former Attorney General Thomas F. Reilly. In Boston there are four racial groups possibly of interest: blacks, whites, Hispanics, and Asians. Recall also that the fraction of each race’s voters who supported a particular candidate (e.g., Patrick) must lie between 0 and 1. What can ecological inference techniques tell us about this election?

The two techniques identified in Gingles, extreme case and regression, both produced plausible results for African-Americans and Caucasians, suggesting that blacks overwhelmingly supported Patrick, but that whites generally preferred one of the other two candidates, with a white voter support rate for Patrick of around 30% to just above 40%, depending on which of the two techniques was used. Notice that if the law included a numerical rule focusing on whether the white crossover rate was above 40%, as per section I.B.1, it is not clear what a judge would do.

The real trouble was with the other two racial groups. There were no homogenously Hispanic or Asian precincts, rendering extreme case analysis unavailable. Further, regression

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141 In multi-race, multiple-candidate, plurality-take-all contests, expert witnesses frequently combine candidates of similar race together when attempting to analyze racial voting patterns. See, e.g., Barnett v. City of Chicago, 969 F. Supp. 1359, 1424 (N.D. Ill. 1997) (“Professor Lichtman's analysis of polarized voting combined candidates by race or ethnicity.”). The California Voting Rights Act requires such combinations. Cal. Elec. Code § 14028(b) (“In multisat at-large election districts, where the number of candidates who are members of a protected class is fewer than the number of seats available, the relative groupwide support received by candidates from members of a protected class shall be the basis for the racial polarization analysis.”). The implicit assumption appears to be that voters’ second choice candidates are of the same race as their first choice candidates, e.g., that voters who supported Gabrieli would have supported Reilly had the former not run, and vice versa. I did not follow this practice here in that GQ Model produced figures for all three candidates separately.

142 Specifically, the support rate among white voters for Patrick from regression had a point estimate of .40 with a standard error of .07. Patrick support rates in the 20 precincts that were 95% or more white ranged from .17 to .46, with the median around .3. These latter figures are mathematically inconsistent with a critical assumption needed for both regression and homogenous precincts, i.e., that the Patrick support rate among white voters is the same (or very nearly so) in all precincts. See Bernard Grofman, A Primer on Racial Bloc Voting Analysis, in The Real Y2K Problem: Census 2000 Data and Redistricting Technology 43 (Nathaniel Persily ed., 2000) (section on floating bar charts).

With respect to African-Americans, extreme case analysis and regression agreed that support rates among black voters for Patrick were around 90% or higher, although the regression produced a large standard error (.15). The extreme case analysis is of questionable reliability given that it relied on only four observations (there being only four precincts with black VAP of greater than 90%).

143 The most Hispanic precinct in Boston had a Hispanic VAP on the order of 60%; for Asians, the corresponding figure was around 50%. Boston Redevelopment Authority Report # 548b (Revised), Boston’s Voting Population – 2000 (on file with author).
estimated that the support rates for both Gabrieli and Reilly among Hispanic eligible voters were negative, while the estimate for Patrick was positive. According to the industry practice (discussed in Part I, above) among experts favoring the use of regression, we should set the Gabrieli and Reilly support rates to the nearest plausible value, 0, and conclude that Hispanics overwhelmingly supported Patrick in this primary; at a minimum, we should conclude that Hispanics preferred Patrick to the other two. As for the support rate for the three candidates as a function of Asian VAP, estimates for all three were negative; incidentally, all three estimates were also highly statistically significant, suggesting (in a purely statistical sense) a high degree of confidence that the true support rates among Asian voters were in fact below zero.  

The results from the GQ Model were more revealing, both in the substantive sense and in the sense of disclosing where trouble lay. The results for blacks and whites were roughly similar to those from extreme case and regression, but the GQ Model provided some evidence that Hispanic voters generally opposed Patrick (in contrast to the overwhelming support “estimated” by regression), although the results were not conclusive. The point estimate for the Patrick support rate among Hispanic voters was 22% (in contrast to a point estimate of 59% for Reilly). Taking into account uncertainty reveals a more complicated picture. On the one hand, the 95% interval for the Hispanic voter support rate for Patrick was (0.0, .78), which is wide. On the other hand, the GQ Model estimated an 80% probability that the majority of Hispanics preferred someone other than Patrick. Thus, the 95% interval is wide, but at a minimum, it suggests at least that it is unlikely that Hispanics overwhelmingly supported Patrick, the conclusion that ecological regression (as currently used) would have us reach. In fact, we have some evidence that Hispanic voters actually preferred someone else. That Hispanic voters, in contrast to the estimates from regression, might have opposed a black candidate in the Democratic primary is consistent with results estimated from other recent contests in the City of

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144 These regressions of percentage of votes for a particular candidate on eligible voters are the building blocks for the estimates of estimates for actual voters in what experts have labeled the “double regression” technique. See, e.g., Grofman & Barreto, supra note 23.

145 See supra notes 94-95.

146 Estimated support rates as a function of Asian VAP for Gabrielli, Patrick, and Reilly were -.13, -.15, and -.10. The corresponding t statistics had absolute values of 6.6, 3.1, and 4.2.

147 95% posterior intervals for support Patrick support rates among black and white voters were (.93, .95) and (.42, .44), respectively.

148 This is an example of Bayesian inference. The GQ Model begins with a very mild prior belief that candidate support rates for each race’s voters are all 50-50 (in a two-candidate contest) or 1/3-1/3-1/3 (in a three-candidate field). By “very mild prior,” I mean that GQ Model begins with a very high degree of uncertainty about these beliefs, doing so allows the data to dominate the prior. The question, then, is whether the data usefully “updates” this belief. Here, it does by placing 80% of the posterior distribution (which is a mathematical combination of the prior belief and the data) for the Hispanic support rate for Patrick below .5. See David H. Kaye, What Is Bayesianism?: A Guide for the Perplexed, 28 Jurimetrics J. 161 (1988).

149 More technically, 80% quantile in the posterior distribution for the Patrick support rate among Hispanic voters was approximately .5. The posterior distribution was asymmetric.
Boston, including the 2008 presidential primary, and as well as elsewhere around the nation. Finally, for Asians voters, the GQ Model estimated a 95% interval for the Patrick support rate of (.01, .99) (remember that the support rate had to be between 0 and 1), which is not very helpful.

Why were the estimates for Hispanics and Asians so uncertain? There were four racial groups. Hispanics and Asians in Boston have (relative to whites and blacks) somewhat scattered housing patterns, so as noted above, there were no homogenously Hispanic or Asian precincts. Further, turnout for both groups (as a function of VAP) was low, at best about one quarter of the turnout rate for both blacks and whites. In short, all of the factors identified above were present, making trouble likely.

What did we learn from this exercise? First, some modern settings, particularly those involving more than two racial groups, require the use of modern ecological inference techniques and fitting algorithms, such as the GQ Method, to produce useful information regarding racial voting patterns. As a corollary, the practice among expert witnesses of “adjusting” physically impossible figures to 0 or 1, whichever is closer, must be abandoned (and courts should no longer tolerate it); here, the practice would have produced not just an statistically indefensible results but the wrong substantive answer for Hispanics. Second, we must have honest estimates of uncertainty, as well as a firm eye on the fact that statistical uncertainty in the racial bloc voting context involves a nuanced inquiry into more than evidence of a difference in the behavior of racial groups that is unlikely to be due to chance. In the Duval Patrick example above, there was strong evidence that Hispanics voted for Patrick at a rate lower than did blacks; and there was evidence that Hispanics in fact preferred Reilly to Patrick, but the uncertainty in the estimation cautioned against overreliance on the latter conclusion. Third, even the best ecological inference techniques currently available fail to provide useful information on some racial groups of interest in some settings. At present, for Asian-Bostonians, housing patterns are insufficiently segregated, raw numbers and turnout too low, for ecological inference models to say much that is helpful.

III. Some Recommendations

Can we litigate well (or well enough) the issue of racial bloc voting without primary reliance on ecological inference techniques? Can we litigate the issue well (or well enough) without being able to demonstrate that ecological inference models would provide useful information? Then we face an empirical struggle to see how well it is possible to make the case for racial bloc voting

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150 In the 2008 Democratic presidential primary, the GQ Model estimated that the Hispanic voter support rate for Obama was .12, with a 95% interval of (0.0, .37). Note that the corresponding 95% interval for the rate for Asian-Bostonian voters was (0.0, .97); again, not very useful.


152 95% intervals for black, white, Hispanic, and Asian turnout were (.24, .27), (.21, .22), (0.0, .06), and (0.0, .04).

153 Again, the GQ Model estimated a 95% interval for the black and Hispanic support rates for Patrick at (.93, .95) and (0.0, .78) respectively. Non-overlapping intervals are strong evidence of difference.
without any form of quantitative evidence of election results? I believe the answer to both questions in some jurisdictions is “yes,” although this may be an instance of accepting second- or third-best outcomes, and there are different prices to pay depending on the choices made. At a minimum, proof of racial bloc voting requires transformation, so that the standard package becomes a mix of ecological inference methods, surveys, and a healthy dose of non-quantitative evidence. Even so, in some jurisdictions, the needed information may not be available, in which case the party with the burden of “proving” of disproving racial bloc voting will simply lose.154 Whether the needed information is available must be made on a case-by-case basis, but before concluding that we can say nothing, we should examine all possible sources of information.

I proceed in two parts. First, I propose definitions of racially correlated and racially polarized voting, definitions that can fit within the Gingles framework155 and that are consistent with much (nothing could be consistent with all) of the case law in this area.

Second, I discuss alternatives, both quantitative and otherwise, to ecological inference techniques as a source of evidence of racial bloc voting. In the quantitative category, the primary alternative is some form of sample survey, such as an exit poll or a pre-election telephone poll of likely voters. Regarding the non-quantitative category, I contend that a variety of kinds of evidence, including some listed in the Senate Report156 and considered at the totality of circumstances stage of a vote dilution lawsuit, are relevant to racial bloc voting. I also highlight the fact that each of these alternatives, quantitative and non-quantitative, carries the potential for costs ranging from additional expense to the need to delay the filing of lawsuits to increasing the divisiveness of the litigation process. My suggestion, however, is that in many modern, multi-racial polities, the choice may come down to bearing these costs or being rendered powerless to asses whether voting is racially polarized (and thus whether vote dilution is occurring).

A. A Proposed Definition of Racial Bloc Voting

1. What Is Racially Correlated Voting in a Multi-Racial Polity?

I take as axiomatic that there cannot be racial bloc voting unless there is racially correlated voting. Thus, to define racial bloc voting in a multi-racial polity, we need to begin by defining racially correlated voting in a multi-racial polity. In my view, the primary challenge here is not conceptual (as some commentators have suggested157) but empirical. On the conceptual/definition side, we might think of racially correlated voting among more than two racial groups as occurring when each group has a distinctive set of preferences that tend to repeat

154 I place “proving” in quotes to clarify that the proof may occur in a court proceeding under either Section 2 or Section 5 (in the latter setting, the burden of disproving bloc voting may be on the state), in an administrative proceeding (USDOJ preclearance under Section 5), or the hustle of redistricting by state officials following a Decennial Census.

155 Despite numerous calls to do so, the Court does not appear inclined to abandon either the threshold-plus-totality-of-circumstances aspect of the Gingles framework, nor the structure’s three thresholds. See Bartlett, 129 S. Ct. at 1244.

156 See TAN 34, supra.

157 See, e.g., Saunders, supra note 21, at 1370.
over time, preferences taking the form of an ordering of the races of each group’s preferred candidates. For example, white voters (say) tend to prefer white candidates, then Hispanic candidates, then black candidates, or some other ordering. One might expect that if such tendencies exist, members of each racial group would tend to place candidates of their own races first. Racially correlated voting is thus defined as (i) patterns that, within group, are reasonably stable over time, and (ii) patterns that are different among groups.158

Implicit in this definition is the fact that contests featuring candidates of a single race provide little information on whether voting is racially correlated because they tell us nothing regarding a preference ordering tied to candidate race. Some might find this unfortunate, and certainly in an ideal world, matters would be different.159 Nevertheless, LULAC v. Perry suggests that the Supreme Court deems it plausible that single-race contests have little information on racial bloc voting.160 Moreover, a purpose of this article is to introduce pragmatism to this sort of debate. In a multi-racial polity, we often will not have the data needed to analyze voting patterns without heavy reliance on candidate race. The first-past-the-post, winner-take-all nature of most United States electoral contests structurally encourages two-party organization, and candidates generally do not run unless they think they can win. Even in primaries (which either by law or voter choice can often involve radically different electorates from generals), there are often only two serious contenders. In biracial politics, two is often enough because ordinarily in such polities, if voting is racially correlated in partisan contests, it typically means that blacks are voting Democrat and whites are voting Republican. But in multi-

158 For purposes of defining racially correlated voting, if two groups’ racial preferences match, then one might consider deeming them a single group for purposes of racially correlated voting. Hypothetically, for example, if both whites and Asians generally are indifferent as to whether a candidate is white or Asian, but both groups generally prefer either a white or an Asian candidate to a Hispanic, with a black candidate ordinarily least favored, then perhaps these two are one group for racially correlated voting purposes. Whether a plaintiff can sue on behalf of this kind of single group is the subject of yet another circuit split. Compare Nixon v. Kent County, 76 F.3d 1381 (6th Cir. 1996) (en banc) (black/Hispanic combined claim not allowed on grounds of statutory interpretation, regardless of voting patterns) with Campos v. City of Baytown, 840 F.2d 1240, 1245 (5th Cir. 1988) (allowing black/Hispanic combined claim if the evidence shows cohesion).

159 On the “liberal,” side, some argue that race of the candidate is irrelevant because what matters is voter preferences, which might or might not be a function of candidate race. See Gingles, 478 U.S. at at 67 (Brennan, J., for four justices). On the “conservative” side, some judges have argued against the practice of analyzing only those contests in which a candidate of minority race stands on the grounds that limiting the relevant data in this way presumes that only a white can be the candidate of choice of white voters, only a black the choice of black voters, etc. See, e.g., Cousin v. Sundquist, 145 F.3d 818, 825 (6th Cir. 1998).

160 In LULAC, the Supreme Court affirmed as not clearly erroneous a district court finding that Martin Frost, a long-serving white Democratic congressman, was not the candidate of choice among African-Americans because he had, allegedly, never faced a black-preferred opponent (although he had faced, and previously lost to, a white opponent), and because the district was drawn for a white Democrat. 548 U.S. at 443-44. That Frost, whose voting record in support of African-Americans-preferred viewpoints was strong, would be deemed not to be the black candidate of choice suggests an extraordinary emphasis on candidate race consistent with Justices White and O’Conner’s opinions in Gingles. The LULAC court’s emphasis on Frost’s race is consistent with its treatment of Frost’s first victory 25 years earlier. See Seamon v. Upham, 536 F. Supp. 931, 995-96 (E.D. Tex.) (“[E]lection returns establish convincingly that, at least with respect to Congressional races, no . . . polarization exists. In 1980, Congressman Frost defeated a Black Republican opponent by a substantial margin, and in doing so, garnered the overwhelming support of the black community.”), rev’d on other grounds, Upham v. Seamon, 456 U.S. 37 (1982) (reversing the district court’s grant of relief based on reasoning that depended on accepting the district court’s finding quoted above).
racial polities, even if we look to primaries, it will often not be possible to figure out whether a group “really” supports a candidate without a strong presumption that in contests featuring candidates of different race, if voting is racially correlated, then a candidate of race X is the candidate of choice of voters of race X.  

This definition also makes clear the empirical challenge we face even assuming a willingness to rely heavily on candidate race, and even if voting behavior were directly observable (i.e., assuming away the secret ballot). There may be an unfortunate sparseness of contests involving the combinations of candidate races we need to draw inferences about preference orderings. For example, even limiting ourselves to two-candidate contests, in a jurisdiction with three relevant racial groups, we need (for a full picture) several contests of each of the following types: white candidate versus black candidate, white candidate versus Hispanic candidate, and black candidate versus Hispanic candidate. Note that there six race-pair combinations in a polity with four political relevant racial groups.

On the bright side, the preference ordering hypothesized in this subpart may not need to be strict to be legally relevant, and we may not need a full preference ordering for every racial group in a polity. For example, white voters may vote en masse for white candidates, but when faced with a series of contests featuring Hispanic versus black candidates, white voters may switch back and forth in their preferences, or they might divide. To see whether this kind of correlation can constitute part of a vote dilution injury, we need a definition of racial bloc voting.

2. What Is Racial Bloc Voting in a Multi-Racial Polity?

I propose the following definition of racial bloc voting: a plaintiff proves that voting is racially polarized when she shows that voting in a jurisdiction is racially correlated, that the candidates of choice of a politically cohesive racial minority group have consistently lost in the past, and that these patterns are likely to continue for the foreseeable future. This definition has three primary features: its explicit focus on the future, its avoidance of reliance on numerically defined thresholds or rules of thumb, and its straddling of the issue of causation. I briefly discuss each in turn.

At this point, however, I reemphasize that the precise definition of racial bloc voting courts employ matters less, perhaps far less, than the evidence they accept as sufficient to discharge a burden of proof. As discussed above in the context of causation, courts have nominally imposed burdens in this area that they have not taken seriously. Thus, I provide the proposed definition out of a desire to provide a theoretically coherent structure, but perhaps one might get by without such a structure.

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161 In particular contests, we might look to non-quantitative evidence to discern whether a particular candidate is the choice of a particular minority group. See Evelyn Elayne Shockley, Voting Rights Act Section 2: Racially Polarized Voting and the Minority Community’s Representative of Choice, 89 Mich. L. Rev. 1038 (1991). But engaging in this inquiry with respect to numerous elections and multiple racial groups could become difficult.

162 See supra section I.B.2.

163 The Supreme Court may be attempting to do without coherence in the vote dilution area generally. See Gerken, supra note 15, at 1736 (“muddling through”).
a. Focusing on the Future

A primary difference between my proposed definition and those formally articulated in previous judicial opinions is its explicit focus on the future. In my view, this is a matter of candor. True, certain members of the judiciary, particularly Justice Kennedy, have reacted with consternation when confronting the abstract concept of predicting how members of different racial groups are likely to vote in the future, but this consternation conflicts with what courts are actually doing and saying when they discuss facts. Among other things, the fact that the only relief courts award in such cases is forward-looking compels a focus on the future. It is

164 The focus on the future, as well as the fact that racial bloc voting is not the only thing a Section 2 plaintiff must prove to obtain relief, demonstrates that my proposal does not result in equating from “mere political defeat at the polls” with a vote dilution violation. Compare Whitcomb v. Chavis, 403 U.S. 124 (1971) with White v. Register, 412 U.S. 755 (1973).

165 The following passage from Bartlett, part of Justice Kennedy’s reasoning for disallowing a Section 2 crossover claim, is instructive.

[D]etermining whether potential districts could function as crossover districts . . . would place courts in the untenable position of predicting many political variables and tying them to race-based assumptions. The judiciary would be directed to make predictions or adopt premises that even experienced polling analysts and political experts could not assess with certainty, particularly over the long term. For example, courts would be required to pursue these inquiries: What percentage of white voters supported minority-preferred candidates in the past? How reliable would the crossover votes be in future elections? What types of candidates have white and minority voters supported together in the past and will those trends continue? Were past crossover votes based on incumbency and did that depend on race? What are the historical turnout rates among white and minority voters and will they stay the same? Those questions are speculative. . . . We must be most cautious before interpreting a statute to require courts to make inquiries based on racial classifications and race-based predictions. The statutory mandate petitioners urge us to find in § 2 raises serious constitutional questions.

129 S. Ct. at 1245; see Transcript, supra note 54 (Justice Kennedy requests counsel for the United States to “discuss your third rationale because it’s going to require determination of how people would vote.”)

The fact is, however, that courts, including both the Gingles and Abrams courts as well as lower courts adjudicating a Section 2 vote dilution claim, have expressly examined “[w]hat percentage of white voters supported minority-preferred candidates in the past,” “what types of candidates [whites and minority voters have] supported together in the past,” whether “past crossover votes” were based on “incumbency,” and the “historical turnout rates among white and minority voters.” Such inquiries are the guts of Section 2 claims.

166 When dismantling an at-large system of districts, courts change the structure of government for the foreseeable future, and when remedying illegal gerrymandering of a single-membered districting scheme, courts contemplate that the new set of districts will remain in place until the next Census. Only very rarely do courts revisit the change in the structure of government once made (for a rare exception, with the reexamination prompted by allegations that the judicially ordered remedy was insufficient, see Williams v. Dallas, 734 F. Supp. 1317 (N.D. Tex. 1990)). When ruling in favor of Section 2 plaintiffs, courts do not upset the results of pre-lawsuit elections on the grounds that such elections were held under an illegal electoral system, nor do they invalidate laws passed by the illegally composed legislatures, nor do they prevent representatives sitting as a result of the illegal electoral system from enacting new laws, nor do they cut existing terms short, nor do they invalidate the current system for the next election cycle only (and allow the pre-lawsuit system to be used for the subsequent election unless the plaintiff reproves her case).
unsurprising, then, that Section 2 opinions, including at least one by Justice Kennedy, are replete with forward-looking language.\textsuperscript{167}

b. Rejecting Numerically-Defined Thresholds

The definition above omits any reference to a particular threshold of “white” or “majority”\textsuperscript{168},\textsuperscript{169} crossover voting inconsistent with a finding of polarized voting, a la Abrams and Bartlett, as discussed in Section I.B.2. That is because, as explained above, in the modern era in many polities there may be no “white” or even any single, identifiable “majority” bloc. Rather, there may be a system of (potentially shifting) coalitions among different racial groups that consistently leaves one racial group’s candidates on the short end of the stick.\textsuperscript{169}

Given the suggestion that the Supreme Court may be moving toward the adoption of a numerically defined threshold on racial bloc voting, this point is worth articulating in greater detail. For a threshold to be worth the candle, it must possible to state the rule up front with sufficient clarity to govern situations courts are likely to encounter in a way that separates cases that should go forward from cases that should not.\textsuperscript{170} But even in the simplest possible case of only two relevant racial groups, say black and white, the level of crossover voting sufficient to allow a chance of success of black-preferred candidates is a function of at least four quantities: black turnout, white turnout, black cohesiveness, and white VAP percentage. It turns out that some of these relationships are non-linear, e.g., a 1% increase in white turnout does not result in a 1% increase, or even a constant percentage increase, in the level of crossover voting needed to

\textsuperscript{167} See LULAC, 548 U.S. at 442 (plurality opinion of Justice Kennedy) (castigating the district court and the Chief Justice for their allegedly myopic focus on “how effective [a district] ‘had been,’ not to how it would operate today, a significant distinction given the growing Latino political power in the district”). My contention is that Justice Kennedy intended the term “today” to refer to something like “the modern era” or “the foreseeable future.” For additional forward-looking language, see, e.g., Gingles, 478 U.S. 51 (characterizing the vote dilution injury as the “usual predictability” of lack of success of minority-preferred candidates); Id. at 99-100 (O’Connor, J., concurring) (stating that the bloc voting inquiry should be whether “substantial minority success will be highly infrequent under the challenged plan”); id at 100 (“will consistently defeat”); id. (“greater white support in future elections”). See also Vecinos de Barrio Uno, 72 F.3d at 990 (highlighting “the import of [the jurisdiction’s] rapidly changing political environment,” in particular the emergence of Hispanic voting power); Martinez v. Bush, 234 F. Supp. 2d 1275, 1299-1300 (S.D. Fla. 2002) (“For the districts at issue in this case, it is impossible to project with certainty the voter turnout and preference by race that will occur during the coming decade. Nonetheless, reasonable projections can be made.”); New Rochelle Voter Def. Fund v. City of New Rochelle, 308 F. Supp. 2d 152, 162 (S.D.N.Y. 2003) (“A reapportionment is not just for today.”).

\textsuperscript{168} Gingles used both terms, essentially interchangeably. 478 U.S. at 49.

\textsuperscript{169} This is not an issue of whether Section 2 protects so-called coalition districts. Bartlett settled this issue for the present. The coalitions I refer to above could take place within, for example, an at-large system in a polity in which several minority groups could each meet the first Gingles precondition.

\textsuperscript{170} See Bartlett, 129 S. Ct. at 1260 (Breyer, J., dissenting); see generally Louis Kaplow, Rules Versus Standards: An Economic Analysis, 42 Duke L.J. 557 (1992).
elect a black-preferred candidate. An appendix has the math.\textsuperscript{171} As one might expect given the themes of this paper, matters get more complicated when there are three or more racial groups in the polity. For example, if there are three racial groups in the polity (say, blacks, whites, and Hispanics), then even if only two candidates (say, black and white) are running, the level of white crossover voting sufficient to afford the black candidate a chance of success is a function of black turnout, white turnout, Hispanic turnout, black cohesiveness, Hispanic cohesiveness and preferences, and the (three-way) racial composition of the electorate. As before, some of these relationships are non-linear, and again, an appendix has the math.

For a less mathematical approach, suppose there are three internally cohesive racial groups, and consider a situation in which whites compose 45\% of the voting polity, blacks at 35\%, and Hispanics at 20\%, where each race’s preference ordering ranks candidates of its own group first. Voting is entirely correlated with race; in other words, all white voters always vote for the same candidate, all black voters always vote for the same candidate, etc, and each racial group will vote for a candidate of its own race before any others. In such a setting, it is easy to see that the outcome of a two-candidate, mixed-race election depends on the preferences of the group that does not have a candidate of corresponding race in the contest. In other words, whites determine the outcome of black versus Hispanic contests, blacks determine the outcome of white versus Hispanic contests, etc. There are two scenarios of particular interest. In the first situation of interest, a minority-coalition scenario, white candidates never succeed, despite (a) the numerical plurality of white voters, who place white candidates first on their preference ordering, (b) the lack of between-group cohesiveness of non-white voters, and (c) the decisive power whites wield in black versus Hispanic contests.\textsuperscript{172} In the second situation, whites voters always elect preferred candidates.\textsuperscript{173} And in either such setting, it may be that whites do vote for Hispanic or black candidates in high numbers, making a focus on crossover voting by white voters, as discussed in Section I.B.1, difficult to understand.

Finally, given the majority- or plurality-wins system in place in most United States jurisdictions, if it can be shown that a cohesive minority’s candidates of choice consistently lose, any remaining doubt on this point should be dispelled by the fact that in most jurisdictions across the United States, a candidate must prevail in both a primary and a general in order to achieve office. In many jurisdictions about which we care for redistricting purposes, the electorates in these two stages often have different racial compositions. Thus, the relevant crossover rate varies according to the stage of the process. This is a principal insight of Bernard Grofman, Lisa Handley, and David Lublin, Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence, 79 N.C. L. Rev. 1383 (2001).

\textsuperscript{171} Black and Hispanic voters would each prefer candidates of their own race, but when faced with the choice of a white candidate versus a non-white candidate, both groups choose the non-white. When a black runs against a Hispanic, the preferences of white voters decide the winner.

\textsuperscript{172} Black and Hispanic voters would each prefer candidates of their own race, but when faced with the choice of a white candidate versus a non-white candidate of the other race, both groups choose the white. Thus, if a white candidate runs, she enjoys the support of both white voters as well as the voters of the race that does not have a candidate in the contest. If the contest is between black and Hispanic candidates, white voters hold the decisive votes. Note that the voting patterns underlying the minority-coalition and whites-always-win scenarios have been found to have occurred in reported cases. See Meek v. Metropolitan Dade County, 908 F.2d 1540, 1545-45 (11th Cir. 1990) (whites-always-win scenario); Campos v. City of Baytown, 840 F.2d 1240, 1246-47 (5th Cir. 1988) (minority-coalition scenario).
it must be because non-members of this cohesive minority (perhaps in various, shifting, but still racially-identifiable combinations) are consistently voting for someone else. Stated another way, if crossover voting by voters outside the plaintiff’s group is sufficient to allow class-preferred candidates a reasonable chance of prevailing, then over time a court should see some successes by the plaintiff’s group’s candidates, which is something the court would have to examine in any event, and which (if, as we must, we are willing to rely on candidate race as a powerful indicator of status as a candidate of choice) is easier to observe. Thus, a separate requirement that a “white” or “majority” bloc consistently defeat the cohesive minority’s preferred candidates adds nothing to the calculus.

c. Straddling Causation

The forward-looking definition I propose straddles the issue of whether a plaintiff must prove racially caused voting or merely racially correlated voting to succeed. By requiring the defeat of the minority’s candidates of choice to be likely in the foreseeable future, causation can be relevant but not dispositive. If courts believe that they can discern whether racial animus in the electorate is causing voting patterns resulting in the defeat of a plaintiff’s group’s candidates, then, as Justice O’Connor recognized in Gingles, such a conclusion would speak to the minority’s future prospects for electoral success. But if a court observes a persistent pattern of losses of the candidates of choice of the plaintiff’s class, it might infer that such a pattern is reasonably likely to continue unless it intervenes, even in the absence of complete information about why this pattern occurs.

B. Alternative Forms of Evidence

Suppose, then, that courts adopt some definition of racial bloc voting that includes an inquiry into whether voting has been racially correlated in the past plus some additional requirement, such as my proposal of a forward-looking focus on success of candidates of a minority’s choice, or perhaps a less-than-serious focus on causation. How can parties litigate, and courts decide, whether the standard has been met in a world in which, due to the presence of multiple racial groups and the possibility of less monolithic white bloc voting, ecological inference techniques may not tell us all we need to know? In my view, there are several alternatives, some quantitative, some not.

1. Alternative Quantitative Evidence

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174 As I have suggested in other work, my view is one cannot articulate a well-defined causal question linked to available data in this setting. See Greiner, supra note 68.

175 Gingles, 478 U.S. at 100 (O’Connor, J., concurring).

176 See supra section I.B.2
Why do so few Section 2 cases feature the primary empirical technique that politicians, the academy, the media, and thus the general public use to gain knowledge about voting patterns by race (or other characteristic), i.e., the sample survey? Surveys have three primary drawbacks. First, they cannot go backwards very far in time, and under most conceptualizations of racial bloc voting (including my proposed forward-looking definition) a plaintiff must establish patterns over some time period. Second, polls can be expensive. Third, modern circumstances, particularly the advent of so-called “convenience voting” and the increasing prevalence of cell phones, have lowered response rates, raising the possibility that survey results might be challenged in Daubert grounds. Note that a fourth potential issue with surveys, the so-called “Bradley” or “Wilder” effect in which white respondents overstate their level of support for candidates of minority race so as to avoid appearing racist, appears to be less of an issue now than it used to be.

My points here are that the drawbacks identified above, while real, should be thought of as costs, not insurmountable burdens; that, as detailed in Part II, ecological inference has costs in terms of fragility of its inferences (always present) and, increasingly, an inability to provide useful information in the modern United States; that steps can be taken to reduce the costs associated with surveys; and that it may be worth paying these partially reduced costs to obtain needed evidence, particularly when ecological inference breaks down. In an effort to assess how high these costs are, I experimented with survey methods in the City of Boston. In 2008, I organized over 400 college and graduate students from 11 Boston-area colleges and universities in the conduct of an exit poll in the City of Boston covering the presidential contest as well as three ballot initiatives then on the ballot. In 2009, I organized a group of academics that ran a telephone survey of likely City of Boston voters in the 2009 City Counsel contests. The discussion that follows is thus based on my experiences in this area as well as on what for academics is the more traditional source of information, i.e., reading about what someone else has done. I draw the following conclusions.

First, to make polling results part of an evidentiary showing for a court, a litigator must understand that her role may extend beyond packaging and presenting evidence gathered by others to organizing a fact-finding effort (such as a set of surveys), and that this process may

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177 Of the very few courts to have considered survey evidence, a few have reacted favorably, while others have been more skeptical. Greiner, Jurimetrics, supra note 43, at 120 n.21 (collecting cases).


179 Gingles upheld a finding of vote dilution based on quantitative data covering three election cycles, a period representing six years. 478 U.S. at 80. Lower courts have sometimes demanded evidence going further back. See, e.g., Lewis v. Alamance County, 99 F.3d 600 (4th Cir. 1996).

180 Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993) (establishing the district judge as a gatekeeper for scientific or expert evidence under an “assist the trier of fact” standard).


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require a time investment. In particular, when ecological inference methods produce inconclusive evidence of racial bloc voting, a litigator may need to implement or commission a series of polls over more than one election cycle, potentially requiring that a lawsuit be delayed until polls are taken and the results known. Thus, major costs to this course of action are time and expense. There is little to be done about the time; the need for polls over several election cycles may be a fact of life in some multi-racial polities. But expense can be partially addressed. One way to do so is to find partners to share costs, particularly in academia or the media. On the former, my experience in recruiting students to administer an exit poll suggests that such partnerships can be easily formed. Participating in political polling can be an excellent experience for students, and professors and administrators seem eager to provide their students with this chance. Similarly, the telephone survey I co-implemented began with the formation of a partnership among four professors that was easily organized. Gaining information useful for a racial bloc voting inquiry involves asking only a handful of survey questions (race/ethnicity, which any virtually poll would ask, along with voter choices on extant contests), leaving survey space free for other partners to explore topics of interest. The resulting opportunities for cost sharing are obvious. Regarding the media, much may depend on the jurisdiction of interest and the contests involved, but if the past is any guide, newspapers and other media outlets commission polls in local elections, and vote dilution expert witnesses have even obtained and

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182 Cite to lawyer-as-investigator literature.

183 A potential issue here is preventing the need for a lawyer to testify in the ensuing litigation. See American Bar Ass'n, Model Rules of Professional Conduct Rule 3.7. Although I bracket this issue for the purposes of this article, this problem seems manageable. Polls are multi-person operations.

184 Some might phrase this concern in terms of an undue burden on the minority group whose members might bring a Section 2 action, the idea being that these plaintiffs would have to suffer under an illegal districting scheme until poll results are known. In my view, this is the flipside of the argument, made the year after Gingles was decided (see Abigail Thernstrom, Whose Votes Count? Affirmative Action and Minority Voting Rights 240-244 (1987)) and now repeated given the election of President Obama, that we no longer need vote dilution law. Both arguments assume that there are, or are not, vote dilution problems prior to the determination that there is, or is not, racial bloc voting in relevant polities.

185 By way of example: when I began recruiting for the exit poll we administered in 2008, I hoped for approximately 150 or so student participants from 4-5 colleges and universities. We ended up with over 400 pollsters from 11 institutions; the number of pollsters was so large that we encountered logistical problems stemming from having too many pollsters. See Greiner & Quinn, supra note 27. Student participants received a variety of forms of academic credit for participation (some were also paid from grants we obtained).

Note similarly that some of the best exit polling in the world is currently conducted in Utah on a statewide basis by students from a consortium of universities led by BYU. See S. Grimshaw et al., Twenty years of the Utah Colleges Exit Poll: Learning By Doing. 17 Chance 32 (2004); see also http://www.mc.maricopa.edu/other/engagement/Journal/Issue11/Daynes.shtml (last visited August 18, 2009). The Utah consortium recently conducted exit polls in Ohio as well.

Some might argue against student-based exit polls on the grounds of age-based interviewer effects, which were blamed in part for the failure of the 2004 National Election Poll Exit Poll to project properly the result of the 2004 presidential election. See Edison Media Research and Mitofsky International, Evaluation of the Edison/ Mitofsky Election System 2004, at 15 (January 19, 2005) (copy on file with author). On the other hand, some student-based polls have substantial advantages over those run by polling firms. Polling firms rarely have more than one pollster per polling location (see id. 50-51), while the Utah Colleges polls average three (our Boston poll averaged four), leading to greater coverage. Further, students are ordinarily trained in person, while polling firms often train over the phone. Id. And, again, the issue should not be whether student-as-pollster polls are perfect, but whether they can provide useful evidence.

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used the resulting data. Looking forward, prospective litigants might offer to share costs with media outlets.

Second, not all polls are alike in expense and effort required; again, tradeoffs are involved. While they can be (depending on a jurisdiction’s rules regarding convenience voting) the most accurate information-gathering device available, exit polls involve substantial startup costs or, if a polling firm is hired, can be expensive, and they are not an option in vote-by-mail jurisdictions.

Telephone surveys are easier and cheaper and they require less advanced planning, allowing a decision on whether to poll to be made after the candidates for relevant contests become clear (so that, for example, investment need not be made if the only contests in a particular year are unlikely to produce much useful information). Moreover, due to the increasing availability of commercial databases detailing demographic information on past voters, telephone surveys can in part be targeted to oversample members of particular racial groups.

Third, the results of reasonably well-executed telephone surveys or exit polls should not be categorically excluded from evidence on Daubert grounds. True, surveys have their methodological challenges. Exit polls are not technically random samples and typically have on the order of 50% response rates. The movement toward convenience voting may further challenge implementation. Pre-election telephone surveys cannot identify actual voters, so assumptions (sometimes strong assumptions) must be made regarding the relationship between survey respondents and the electorate, and care must be taken to address the tendency among survey respondents to overreport voting behavior. Non-response rates from telephone surveys are often higher (they can be much higher) than those of exit polls. Cell phones, which make

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187 Currently, Washington and Oregon either require or allow voting by mail.

188 This might be true because all of the contests in a particular year are predicted to be landslides or because all contests are between candidates of the same race. For an example of the latter, see text following note 216, documenting that in 1999, no candidate of color contended for a Boston City Council at-large seat.

189 Our Boston telephone survey in fact targeted and reached approximately 150 likely voters from each of the four major racial groups in the City of Boston, namely, African-Americans, whites, Hispanics, and Asians.

190 Exit polls are often interval samples, meaning that (say) every eighth voter is approached (eight was the interval we used in our exit poll). The assumption is that there is no clustering of voters in a way that would affect the poll’s results, which seems plausible so long as the interval is not too narrow.

191 Our 2008 exit poll achieved a 57% response rate, see Greiner & Quinn, supra note 27.

192 Often, pre-election telephone surveys rely on lists of voters in previous contests (as matched to telephone numbers and demographic information available from commercial sources). Persons who answer the telephone call are then asked aggressive “screening” questions designed to measure the likelihood that they will actually vote in the upcoming election. As a result, the telephone survey is not a random sample of the target population (which is the set of voters in the election of interest). An assumption that the telephone survey was in some sense “good enough” is exactly that, i.e., an assumption. As noted above, this assumption can be partially assessed by determining how well the results of the survey project the results of the actual election.

locating residents of a jurisdiction by telephone exchange more difficult, constitute an additional challenge, although a challenge that modern, commercially available databases linking together voters’ names, addresses, racial information, and telephone numbers are making less important. Nevertheless, in exit polls, statistical techniques (such as weighting for non-response and multiple imputation\textsuperscript{194}) can attempt to address many of these issues. And in most surveys, including both telephone surveys and exit polls, projected results from the survey that incorporate nonresponse or post-stratification weighting techniques can be compared to actual vote tallies to assess survey quality and representativeness.

More fundamentally, one should compare the reliability of polls, not to a hypothetical perfect sample survey with 100% response, but to the reliability of the evidence upon which vote dilution cases have relied for decades, \textit{i.e.}, the results of the fragile ecological inference methods discussed in Part II. Surveys have the enormous advantage of producing individual-level information, and as such do not encounter the problems discussed in sections IIA and IIB. Further, unlike ecological inference methods, surveys can be partially targeted at hard-to-estimate populations, such as Hispanics and Asians.\textsuperscript{195} Reasonable (but imperfect) surveys should thus be compared to fragile ecological inference. Poorly executed surveys, like poorly executed ecological inference analyses, should be excluded or given little evidentiary weight, but there is little new in this realization.

2. Alternative (Non-Quantitative) Sources of Evidence

As courts adjudicate whether voting is racially correlated or even caused, one might think that the presence of observable race-based campaign appeals (particularly by successful candidates),\textsuperscript{196} a factor listed in the Senate Report,\textsuperscript{197} would constitute useful evidence. It is at least plausible that race-based appeals constitute not just revealed predictions by candidates (whose job it is to be knowledgeable about such things) as to the electorate’s preexisting preferences but also a means by which candidates attempt to shape those preferences to racially specific voting patterns inuring to the candidates’ benefit. Similarly, another Senate Report factor, governmental unresponsiveness to minority issues and concerns, suggests a conclusion among elected officials that they can ignore the views of minority voters without jeopardizing

\textsuperscript{194} See Donald B. Rubin, Multiple Imputation for Nonresponse in Surveys (1987); for an example of the use of multiple imputation in exit polling, taking advantage of observed characteristics of voters, see Greiner & Quinn, supra note 27.

\textsuperscript{195} We explored the statistical advantages of such targeting, and implemented such a scheme, in our exit poll. Greiner & Quinn, supra note 27, and in our telephone survey. The targeting is not perfect; it depends, for example, oversampling polling locations in Hispanic or Asian neighborhoods (in an exit poll), or targeting voters with identified as Hispanic or Asian in commercial databases. But despite its imperfections, targeting helps a lot.

We used commercially available information on past voters to oversample Asians and Hispanics in our 2009 telephone survey.

\textsuperscript{196} As detailed in Katz, supra note 44, race-based appeals have taken various forms. Examples include a white candidate’s use of a black opponent’s (often darkened) photograph in the former’s campaign literature; linking of a local minority candidate to a locally unpopular national political figure (such as Jesse Jackson); and appealing to citizens of a jurisdiction to resist a recent influx of a new kind of resident that threatens to change the character of the community.

\textsuperscript{197} See TAN 32.
their prospects for reelection, which would ordinarily be true only if voting is racially polarized. This is, again, potential evidence of racial bloc voting, evidence one might expect courts to use in adjudicating its presence. In fact, however, I was unable to find a post-Gingles published case in which either race-based campaign appeals or lack of governmental responsiveness, found to be present in the relevant jurisdiction, was mentioned or discussed during adjudication of racial bloc voting. Instead, these two factors were considered only at the totality of circumstances stage, after the court had decided whether bloc voting was present, when it canvassed the laundry list of factors from the Senate Report.198

Other facts indicative of the presence or absence of racial bloc voting, factors not mentioned in the Senate Report, are rarely mentioned. I highlight two. First, evidence that voters organize themselves along racial lines suggests a mindset in the community that may carry over into the polling booth. Thus, for example, the presence in a community of the following, among other factors, might suggest racial polarization (although none would be necessarily conclusive): active, racially identifiable civic/political organizations that groom or endorse candidates; overall campaign strategies, or a substantial quantity of campaign events, designed to appeal peculiarly to potential voters of racially defined groups; and politically active media institutions serving members of a racial community and covering political issues of particular


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concern to that group. Second, organization and action in the legislative body itself along racial lines, including machinations in the districting process itself, suggest that the electorate views itself along the same racial lines and votes accordingly.

Why have none of these potential indicators of racial bloc voting appeared in judicial opinions on the subject? After 1986, this may have been a matter of path dependency: as noted above, even after reciting lower court findings of race-based campaign by successful candidates in the North Carolina legislature, Justice Brennan’s opinion in Gingles discusses the issue of racially polarized voting in purely numerical terms (and relying exclusively on ecological inference techniques). The plaintiffs’ victory in Gingles, the roadmap this victory offered for future litigants, and the force of precedent in a common law system may have done the rest. But this begs the question; what are the costs of relying on non-quantitative evidence in this area?

One major cost is the danger that in crediting some of the identified types of nonquantitative evidence, a court characterizes the actions of voters or of potentially powerful actors in the political system as essentially racial, perhaps racist. The divisiveness of such a finding, and what may be a corresponding reluctance among the judiciary to find such facts, were dangers Justice Brennan identified when he articulated the reasons why, in his view, racial bloc voting meant racially correlated voting, without regard to whether voting patterns were caused by white racial hostility to candidates of minority race. To some extent, the dangers here can be overstated. Courts are required to consider the factors listed in the Gingles totality-of-circumstances stage, including those listed above, at the totality of the circumstances stage, so one might argue that a recognition of the probative value of these facts as applied to the Gingles prerequisites does not increase the risk of divisiveness. Similarly, courts have sometimes shown considerable impatience with redistricting machinations inside a legislative body that they believe to be targeted in some way at a minority group, even if such machinations are insufficient to support a formal finding of intentional discrimination; in such situations, courts find ways to make such evidence relevant.

Finally, if racially identifiable campaigns events, newspapers,

199 These and other factors were mentioned by the district court in Bone Shirt v. Hazeltine, 336 F. Supp. 2d 976 (D.S.D. 2004). The Bone Shirt opinion is an outlier among Section 2 cases in its lengthy, nuanced discussion of the nonquantitative evidence the parties proffered regarding racial bloc voting. It is the one opinion I found in my review of district court cases that appeared to anticipate some of the themes regarding alternative sources of evidence articulated in this Part.

200 To be probative of racial bloc voting, this disregard need not rise to the level of hostility required to support a finding of intentional discrimination. The goal is to draw an inference about voting patterns from the behavior of persons whose business it is to be knowledgeable about such things, not to assess such persons’ subjective intent.

201 See United States v. Charleston County, 316 F. Supp. 2d 268, 270 (D.S.C. 2003) (dedicating several introductory pages of an opinion finding a Section 2 violation to clarifying that the finding was “radically not a condemnation of the citizenry of Charleston County”).

202 438 U.S. at 70-74.

203 See, e.g., LULAC v. Perry, 548 U.S. 399, 441 (2006) (removing a Latino opportunity to elect a candidate of choice because Latinos were about to exercise it); Black Political Task Force v. Galvin, 300 F. Supp. 291, 314-15 (D. Mass. 2004) (using race “as a tool to ensure the protection of incumbents”). Note that it is not difficult to find a way to make evidence relevant when the applicable test requires consideration of the totality of the circumstances.
and other aspects of the community exist, the extent of additional damage done by crediting testimony about these circumstances in findings of fact and conclusions of law is open to debate. If I am right about the availability of these alternative sources of information, then in certain redistricting contexts, litigators may need to change the witnesses they interview, hire, and call. In certain multi-racial polities where ecological inference techniques break down, testimony regarding racial bloc voting should no longer be the primary domain of the quantitatively adept. Who might alternative witnesses be? Persons who make it their business to know the politics and the structure of political organization in the relevant locality, or who have the specialized knowledge and contacts to be able to discover this structure if hired as expert witnesses: political consultants, retired or not-presently-active politicians, local non-quantitative political scientists, perhaps even journalists. The prospect of hiring such persons as expert witnesses to conduct investigations and produce expert reports on indicators of voting patterns by race may strike some as unusual. It should not. Such persons have specialized knowledge and methods that they can employ to investigate and gain relevant information; and as sources of evidence, they appear at least as reliable as the politician testimony courts sometimes admit and consider regarding racial voting patterns. By way of analogy, courts have long considered evidence from historians when adjudicating whether districting schemes implemented decades in the past were adopted with racially discriminatory intent.

IV. A Short Case Study: The Boston City Council

To make the ideas discussed in this paper more concrete, I conduct a very brief case study focusing on the availability of evidence regarding whether voting is racially polarized in Boston City Council contests. First, some basic facts: Boston is a true melting pot jurisdiction; in 2007, the city’s citizen voting age population (“CVAP”) was approximately 64% white, 19% black, 10% Hispanic, and 7% Asian; 1990 voting age population (“VAP”) figures were

204 Fed. R. Evid. 702.
205 See supra note 44.
207 My use of the Boston City Council is to illustrate concepts only. Even if voting in Boston were deemed racially polarized, that would not necessarily suggest that the election structure of the Boston City Council violates Section 2 as the law currently stands. For instance, with respect to Hispanics and Asians, there is a question as to whether the city’s housing patterns allow the drawing of a reasonably compact district with the necessary (after Bartlett v. Strickland, 129 S. Ct. 1231 (2009)) majority VAP (or CVAP). Jessica Trounstine and Melody E. Valdini, The Context Matters: The Effects of Single-Member versus At-Large Districts on City Council Diversity, 52 Am. J. Pol. Sci. 554 (2006) (reporting statements by the only Hispanic to ever to serve on the Boston City Council, Felix Arroyo, to the effect that “the demographics of the city [made] the at-large seat . . . better for electing Latinos in Boston, ‘because most of the Latino community is spread across the city, as well as [sic] the immigrant community and the progressive groups’”); see also Barnett v. Daley, 32 F.3d 1196, 1200-01 (7th Cir. 1994) (discussing the possibility of similar configurations of the populations of Hispanics and Asians in the City of Chicago).
essentially identical. Despite this racial diversity, white candidates have enjoyed extraordinary success in Boston City Council’s non-partisan elections, winning 81% of the seats available from 1990 to 2008. Seven of Boston’s nine districts (four seats are elected at-large) have had effective white majorities for the past two decades, and these seven have consistently elected white candidates. Meanwhile, the other two districts, with 81% and 55% black VAP, have since 1990 consistently elected black candidates. During 1990-2008, no African-American won an at-large seat, and the Council had only one Asian and one Hispanic (each stayed only two terms).

Given this record, some suspicion of racial polarization might arise; nevertheless, the 2009 Boston City Council election may have signaled a change. In 2009, the districted seats behaved as they have before, with the election of seven white and two blacks. Regarding the at-large seats, however, two incumbents departed the Council to launch unsuccessful bids for the mayor’s office, and the resulting vacancies brought forward an unusually talented and diverse group of contenders. Of the eight candidates who survived the at-large preliminary, four were white, two Hispanic, and two black, and the winners were two white incumbents, a Hispanic, and an African-American. A somewhat competitive mayoral contest boosted 2009 turnout, breaking a streak of record-low turnouts in Council contests.

The takeaway message from this Part is that assessment of whether voting is racially polarized in Boston City Council elections requires a mix of the results of ecological inference methods, survey sampling information, and non-quantitative evidence. All of these forms of evidence are available at acceptable costs, and they can compliment one another in ways that the current practices (which focus almost exclusively on ecological inference techniques) do not allow. Thus, the City of Boston illustrates the benefits of a more ho


209 Always keeping in mind that Section 2 does not provide a right to proportional representation 42 U.S.C. § 1973(b).

210 As of the 2000 Census, Districts 1, 2, 5, 6, 8, and 9 were 60% or more white VAP. District 3 was 47% white VAP, with the nearest racial group being African-Americans at 28%. CVAP figures by district were not available, but given that white CVAP share is usually a few percentage points higher than white VAP share of Boston’s population, it seems likely that whites have a majority CVAP in District 3 as well. Districts 4 and 7 were 81% and 55% African-American VAP, respectively. Boston Redevelopment Authority, supra note 144. Districts 4 and 7 have without fail elected African-American candidates for the past two decades.

211 See, e.g., John Ruch, Turner: Jackson Should Replace Me in ’11, Jamaica Plain Gazette Online (Nov. 6, 2009) (available at http://www.jamaicaplaingazette.com/node/3746) (reporting statement from long-time Boston Councilor Chuck Turner that 2009 election results are “a testament to the fact there is a new political force on the scene”).


A. Information from Ecological Inference

What can ecological inference methods tell us about voting patterns in City Council contests in Boston? In summary, they provide evidence of differences among whites and blacks, indications of a distinctive Hispanic viewpoint, and virtually nothing useful regarding Asians. Blacks tend to support non-white candidates, whites tend to provide far less support to non-white candidates. There is some indication that Hispanics support Hispanic candidates.

First, with respect to Caucasians and African-Americans, blunt tools suggest racially correlated voting in City of Council contests dating at least back to 1991 (as far back as I investigated) and continuing through the 2007 round of elections. Table 1 provides an example.

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Black</th>
<th>White</th>
<th>Hispanic</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-.77</td>
<td>.71</td>
<td>-.17</td>
<td>.20</td>
</tr>
<tr>
<td>B</td>
<td>.57</td>
<td>-.63</td>
<td>.30</td>
<td>-.02</td>
</tr>
<tr>
<td>C</td>
<td>-.56</td>
<td>.64</td>
<td>-.33</td>
<td>-.03</td>
</tr>
<tr>
<td>D</td>
<td>.95</td>
<td>-.87</td>
<td>.21</td>
<td>-.28</td>
</tr>
<tr>
<td>E</td>
<td>-.63</td>
<td>.62</td>
<td>-.25</td>
<td>.20</td>
</tr>
<tr>
<td>F</td>
<td>.88</td>
<td>-.85</td>
<td>.26</td>
<td>-.21</td>
</tr>
<tr>
<td>G</td>
<td>-.66</td>
<td>.65</td>
<td>-.18</td>
<td>.07</td>
</tr>
<tr>
<td>H</td>
<td>-.47</td>
<td>.45</td>
<td>-.16</td>
<td>.16</td>
</tr>
</tbody>
</table>

This contest feature eight candidates: five Caucasians, two African-Americans, and one Hispanic. First question: by looking at the figures in Table 1, can one identify the three minority candidates? Looking at the “Black” column, one sees that the most positive correlations\(^{213}\) between percentage of the precinct VAP that is black versus percentage of that precinct’s vote going to a candidate occurs for Candidates D (.95), F (.88), and B (.57). Bingo. Candidates D and F are the two African-Americans, Candidate B is the Hispanic. Note that most positive black correlations correspond exactly to the most negative white correlations.

Second question: by looking at the figures in Table 1, can one identify the four winners? Looking at the “White” column, one sees that the highest correlations are for Candidates A (.71), G (.65), C (.64), and E (.62). This guess gets three (A, E, and G) out of four correct; this 2003

\(^{213}\) Almost all of the correlation coefficients discussed in this section were statistically significantly different from 0, but I interpret this fact with caution. The number of precincts in Boston (about 250) means that correlations only slightly different from 0 may be statistically significant.
These patterns repeat almost without fail from 1991-2007. Non-white (black, Hispanic, or Asian) candidates ran in every year except for 1999. Except for one instance, the candidates having the highest correlations with black V AP (and the lowest with white V AP) were non-white. The magnitude of the correlations is also indicative. Black V AP-black candidate correlations are in the high .7s to the low .9s (recall that the highest possible value for a correlation is 1). Black V AP-Hispanic candidate and black V AP-Asian candidate correlations are typically in .5-.7 range. White V AP correlations had the same orders of magnitude but with negative signs (the lowest possible is -1). The upshot: if we believe these data hold information on voting patterns (despite the fragility of all ecological inference techniques), they indicate that black voters’ preference ordering is a black candidate followed by any non-white candidate, with the least affinity to white candidates. White voters prefer white to non-white, and they least prefer black candidates.

The picture for Hispanic voters is more complicated. No Hispanic candidates survived the preliminary round during the 1990s. Two Hispanics made it to the final round prior to 2009, with one (Felix Arroyo, Sr.) running on four occasions. Using the “technique” applied above, one can always identify Hispanic candidates by looking for the highest Hispanic V AP-candidate correlation, but these correlations are of lower magnitude (on the order of .3-.4) than the black and white V AP figures examined above, and Arroyo, Sr. did win twice (both times running as an incumbent) before becoming one of the extraordinarily few City Council incumbents to fail to win reelection. With respect to Hispanic V AP-black candidate combinations, the resulting correlations are positive but mild (.1-.3), and there is an occasional Hispanic V AP-white candidate correlation that is higher than these figures. Thus, subject to the usual caveats, there is some evidence that Hispanic voters prefer Hispanic candidates, with preferences of Hispanic voters vis-a-vis black, white, and Asian candidates uncertain. It is not clear whether these figures suggest an absence of race-based preferences or the informational challenges discussed in Part II.

The Asian V AP correlations are uninformative. Correlations have low magnitudes, and no discernible pattern emerges. Again, it is not clear whether this signals an absence of race-based preferences among Asian voters or just a shortage of information.

214 Yvonne Abraham, “I arrived here, and the whole city was judging people by their color”, Boston Globe (October 26, 2005), available at http://www.boston.com/news/local/massachusetts/articles/2005/10/26/i_arrived_here_and_the_whole_city_was_judging_people_by_their_color/ (last visited June 4, 2009). In fact, all four victors in this 2003 contest were incumbents.

215 Note that there is also some evidence that minority voters, particularly blacks, were engaging in partial bullet voting. During the 1990s, the correlation between the percent black V AP and the number of votes case per voter was highly negative (-.6 to -.8). In the 2000s, as a few more minority candidates emerged, the picture became more complicated. Note that the bullet voting, if it in fact did occur, did not work: no black candidate was elected to an at-large seat from 1991 to 2007.
These results should be interpreted with caution. For several reasons, some technical, correlation coefficients are blunt instruments. To gain additional information, we can try to apply ecological inference techniques to elections other than those for City Council involving Boston precincts, despite the increasing danger (as explained above) that voting patterns in these so-called “exogenous” elections may be different from those in Council contests. I examined five such contests; the results, while reinforcing the conclusions suggested above for black voters (and to a lesser extent for the white electorate, which appears somewhat more willing to vote for black candidates in these exogenous contests), contain less than crystal clear indications for Hispanic voters and nothing useful for Asians. We need more information here, particularly for Hispanics and Asians.

B. Surveys

Can surveys provide useful information about City Council contests in an operationalizable way? As noted above, I administered or commissioned two surveys in the 2008 and 2009 elections conducted in the City of Boston, the first an exit poll, the second a telephone survey of past voters who were likely to vote again. The 2008 exit poll provided evidence of within-group cohesion among white and black voters as well as mild evidence of a difference in views between Hispanic and white voters, but these signals were not strong because the 2008 contests were either blowouts or ballot initiatives involving issues as to which one would not expect voting to fall along racial lines even in a polity characterized by racially correlated voting. With respect to Asians, the exit poll, when combined with ecological data.

216 Like ecological regression, correlation coefficients ignore the fact that Boston precincts are of greatly different size (in terms of population), and like ecological regression, they measure only linear trends (plots of some of the data do indicate some non-linearities). Further, one might argue with the fact that all candidates on the ballot are included in the figures discussed above, even though not all of these candidates obtained a reasonable percentage of the vote. See, e.g., Teague v. Attala County, 92 F.3d 283, 293 (5th Cir. 1996) (questioning the inclusion of a candidate for sheriff election given the “paucity” of support for him). I have included all candidate in this analysis because Boston has a preliminary round of elections that winnows the field of candidates to eight, meaning all candidates in my analysis have already survived a substantial electoral hurdle. Further, the reasoning that minority candidates with low percentages are not serious has a certain circularity. We do not know whether minority candidates failed to obtain reasonable percentages of the vote because they were not serious or because they were minority. Note that these correlations do not purport to produce estimates of support rates for various candidates by racial group. See supra note 116 for an explanation.

217 See TANs 133-137. The danger is particularly acute in Boston. See TAN 139.

218 The Massachusetts House of Representative districts in the City of Boston consist of a small number of precincts (some on the order of 20), making these contests less helpful regarding voting patterns in the City generally. Moreover, given Boston’s status as an overwhelmingly Democratic town, the general elections available here have less information. Of five contests I examined, two, the 2006 gubernatorial primary and the 2008 presidential primary, are discussed above. See supra TANs 134-137. The other three contests are the 1994 and 2002 primaries for Suffolk County District Attorney and the 2008 Democratic primary for the Massachusetts Senate’s second Suffolk district, with the latter a stretch because it contains only 70-odd of Boston’s 256 precincts. The first two contests featured black candidates against white candidates. The 95% intervals from the GQ Model for the support rates for the black candidates in them were as follows: in 1994 black (.87, .91), white (.56, .57), Hispanic (.3, .78), Asian (.03, .97); and in 2002, black (.80, .85), white (.22, .24), Hispanic (.01, .40), and Asian (.00, .52). The senatorial primary featured an African-American incumbent against a Hispanic/Asian mixed race challenger. The 95% intervals for the challenger were black (.09, .19), white (.77, .86), Hispanic (.01, .94), Asian (.00, .93).

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was able to produce reasonable estimates of Asian voter preferences for ballot initiatives, but again, given the subject matter on the ballot, one would not expect distinctive preferences. Thus, the primary usefulness of this exit poll for present purposes was to demonstrate that one can conduct a high-quality poll using college and graduate students at bearable cost, with results that predict electoral outcomes with reasonable accuracy and in a way that produces other useful research (making the enterprise attractive to partners who might share costs).219

The 2009 telephone survey demonstrated the following contacted approximately 150 person from each of Boston’s four major racial groups. [Placeholder for results of telephone survey.]

C. Non-Quantitative Information

What information can non-quantitative sources provide about voting patterns in Boston councilmanic contests, particularly the at-large seats? My goal here is not to provide the kind of comprehensive evaluation that an expert witnesses, such as a non-quantitative political scientist or a political consultant, could produce. Instead, I demonstrate that non-quantitative sources provide solid ground upon which such an appropriately trained and informed witness could build a useful opinion on racial bloc voting.

In City Council and mayoral contests in Boston for at least the past several years, a major cleavage has been between “New” and “Old” Boston,220 a distinction that is partly but not completely defined by race. Old Boston is whiter (typically Irish and Italian), more conservative, and older. Also part of the Old Boston coalition is city employees, who are disproportionately white and who for over a decade have turned out to support the incumbent (white) mayor.221 New Boston is predominantly minority (but also includes the odd white yuppie/intellectual), progressive, younger, and more likely to be recently arrived to the nation and to the city.222 Old Boston has traditionally dominated city politics, both the City Council and

219 Greiner & Quinn, supra note 27..


the mayor’s office, by turning out in greater numbers, and it has usually been perceived as having voted for white (frequently Irish and Italian) City Council candidates.\footnote{See, e.g., Pete Stidman, Arroyo Out, Connolly in for At-large Council, Dorch. Rep. (Nov. 7, 2007) (available at http://www.dotnews.com/2007/arroyo-out-connolly-large-council-anemic-turnout-across-city).}

In the past decade, the Old/New Boston split has translated into a division on the Council itself, a division defined by race. The division was evident early in the 2000s in a redistricting dispute. A white Council president (11 of the City’s 13 councilors at that time were white) replaced the black chair of the Council’s post-Census-2000 redistricting committee after the latter proposed a redistricting plan that would have increased to four the number of majority-non-white districts in the City. The new, white committee chair proposed the current plan (which will be used until 2013), which had two predominantly black districts and one district with a razor-thin non-white majority but which (due to citizenship figures and the fact that the non-whites here are a combination of Boston’s three non-white racial groups) is effectively dominated by whites voters. The deposed black chair of the Council interpreted this turn of events as racial.\footnote{Sarah Schweitzer, Councilor Wants to Shift District Map, The Boston Globe (Oct. 30, 2001), at B2, available at 2001 WLNR 2232980; Chuck Turner, An Ordinance Amending City Council Electoral Districts, REP. OF THE CITY COUNCIL OF BOSTON (2001), Oct. 31, 2001, at 264-65; Sarah Schweitzer, Lack of Minority Clout Seen in Council Shift, The Boston Globe, Feb. 18, 2002, at A1, available at 2002 WLNR 2590425; Maureen E. Feeney, 2002 Census and Redistricting Committee Report, BOSTON CITY COUNCIL (Oct. 2, 2002), at 10-12, available at http://www.cityofboston.gov/cityCouncil/pdfs/approved_report.pdf); see generally Frederick Warren Goldberg, Promise Unfulfilled: The Failure of the 1981 Boston City Council Electoral Reforms 47-50 (March, 2007) (senior thesis) (on file with author).}

Thereafter, two black and one Hispanic (the only non-white) councilors formed a tight coalition called “Team Unity,” which caucused together, established left-leaning positions on issues, and voted as a bloc, a bloc typically outvoted by the remaining members of the Council.\footnote{David S. Bernstein, So Far, The Race for Boston City Council Is All Talk And No Action, Boston Phoenix (Sep 5, 2007) (available at http://thephoenix.com/Boston/News/46776-rumor-mill/?rel=inf); Donovan Slack, Photo Puts a Focus on City Council Rift, Boston Globe (Oct. 19, 2006) (available at http://www.boston.com/news/local/articles/2006/10/19/photo_puts_a_focus_on_city_council_rift/).} Team Unity endorsed another non-white candidate, Asian Sam Yoon, for an at-large Council seat in 2005. Yoon won and joined the coalition,\footnote{Yawu Miller, Yoon Gets Endorsement from Councilors of Color, Bay State Banner (Oct 20, 2005) (available at http://www.baystate-banner.com/archives/stories/2005/102005-3.htm). Some credited Yoon’s win to the Team Unity endorsement. Time for the Tea Party, Asian Week (Nov 18, 2005) (available at http://www.asianweek.com/2005/11/18/time-for-the-tea-party/#).} which lasted two more years until Felix Arroyo, Sr., the Hispanic, lost; Arroyo’s defeat represented only the second time (out of 25 instances) since 1993 that a sitting at-large incumbent lost a reelection bid on the Boston City Council.

Some City Council campaigns have had racial elements, but not always in the traditional way of white candidates appealing to white racism or broadcasting minority candidates’ races. For example, two African-Americans, an older and more confrontational incumbent and a younger and more conciliatory challenger, contested a district seat in 2003. The challenger received support from the City’s powerful white politicians, a fact which the incumbent made a
campaign issue, portraying the challenger as a tool of white establishment. The incumbent’s subsequent landslide victory is less indicative than is the fact that the incumbent thought that this message would resonate with the district’s predominantly black voters, suggesting a differentiation between black and white viewpoints.

Harder to interpret is the fact that non-white city council candidates emphasize their races in an apparent effort to form race-based coalition of New Boston voters (white candidates generally do not emphasize their races or ethnicities, but it may be that they do not need to do so given the strong signals communicated by their Irish and Italian surnames). This may seem like a signal that non-white candidates perceive that they can emphasize their races without hurting their chances among white potential voters, but that in turn is consistent with two versions of events. In one version, white Old Boston voters are not offended by candidates who celebrate their racial diversity; in a second version, candidates of minority race know (even if they will not say) that white Old Boston voters will rarely support them anyway, so these candidates feel they have little to lose in Old Boston and potentially much to gain in New Boston by broadcasting their racial backgrounds in an effort to induce a New Boston coalition to turn out. Meanwhile, at least currently, some white councilors do attempt to woo the minority electorate, although both the force of these attempts as well as their perceived success are hard to pin down.

Finally, a variety of recent issues in Boston have racial overtones, although for some of them, the manner in which they have been raised suggests that candidates, particularly candidates of minority race, are attempting to use these issues to form coalitions among potential minority voters, raising interpretation issues similar to those discussed above. For example, a recent, divisive issue was a proposal to increase the number of zones in Boston’s public school system, which would have reduced busing costs by sending more children to schools in their own neighborhoods but would also have sent more minority children to lower-performing schools. The incident invoked Boston’s wrenching history with school desegregation via busing and

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227 Cooper, supra note 137; David S. Bernstein, So Far, The Race for Boston City Council Is All Talk And No Action, Boston Phoenix (Sep 5, 2007) (available at http://thephoenix.com/Boston/News/46776-rumor-mill/?rel=inf).


229 Recent successful at-large candidates have included Councilors Murphy, Connolly, Flaherty, Hennigan, O’Neil, and Menino. See Interview with Kenneth J. Cooper, August 27, 2009 (“There is still a fair amount of voting by surname in Boston.”).


raised charges of racism.\textsuperscript{232} In another example, two 2009 challengers for the mayoral position repeatedly called attention to an alleged dearth of minorities on the incumbent’s cabinet, in the city workforce as a whole, and in the Boston Police Department in particular, but one of these challengers was white,\textsuperscript{233} and the incumbent has been perceived as having strong support among minority voters.\textsuperscript{234} Other issues have not followed traditional racial lines. For example, “a white incumbent councilor with a law-and-order reputation [became] a leading proponent to reform the inflexible Criminal Offender Record Information law,” an issue that resonated with many black voters.\textsuperscript{235}

What in particular can non-quantitative evidence tell us with respect to voting patterns of Asians, the racial group for which quantitative evidence had proven somewhat unhelpful? Issues of voting administration, particularly transliteration of candidate names and access to interpreters and bilingual ballots in polling places, have unified Asian-Bostonian voters, with the latter issues resulting in the City’s being sued by the United States Department of Justice.\textsuperscript{236} But the primary opponent here was the Secretary of State; the Boston City Council unanimously endorsed transliteration in 2007.\textsuperscript{237} With respect to candidates, the fortunes of City Councilman Sam Yoon may be instructive. Yoon ran for a City Council seat in 2005, and was successful in his first attempt (after the Team Unity endorsement mentioned above), a rare feat. Yoon has consistently

\textsuperscript{232} John Ruch, 15 Run for 8 At-Large City Council Slots on Final Ballot, Jamaica Plain Gazette Online (August 26, 2009) (available at http://www.jamaicaplaingazette.com/node/3586) (reporting statement by candidate Tomas Gonzalez “that recent school zone proposals were mostly about white parents not wanting ‘brown kids going to school with white-colored kids’”). Note that the mayor-appointed School Committee, which had substantial minority representation, that had first proposed the alteration suspended the plan indefinitely. James Vaznis, Vote On School Assigning Delayed, Boston Globe (June 4, 2009) (available at http://www.boston.com/news/local/massachusetts/articles/2009/06/04/boston_board_delays_school_district_assignment_changes/)


\textsuperscript{234} See Bianca Vazquez Toness, Sam Yoon, Activist For Mayor (transcript of radio broadcast) (Aug 3, 2009) (reporting statement that the incumbent has long counted on support from “African Americans, Latinos and lefties”) (available at http://www.wbur.org/2009/08/03/mayoral-profile-yoon).


\textsuperscript{237} Id.
emphasized his ethnicity in his campaigns and has attempted to build a pan-Asian coalition, to the extent of using fortune cookie prompts and handouts in campaign rallies (Yoon is Korean-American). He was reelected to the Council in 2007, and in 2009, he abandoned his City Council seat for a run at the mayor’s office. His fundraising efforts made news with their emphasis on out-of-city Asian donors. Ultimately, Yoon placed last among the three “serious” candidates in the 2009 preliminary mayoral elections. Note that one of these top two mayoral candidates was four-term incumbent Thomas Menino (Boston’s longest-serving mayor), who had previously enjoyed substantial support in the Asian community, complicating Yoon’s effort to form a pan-Asian coalition for his run.

To conclude: there appears to be a rich amount of non-quantitative information upon which an appropriately trained or placed expert could build an opinion as to the cohesiveness and voting patterns of Boston’s four major racial groups. None of an expert’s conclusions would be certain, but despite Justice Kennedy’s protestations to the contrary, certainty has never been the standard, and it has never been provided by the quantitative evidence upon which courts have relied heavily in the past.

D. Conclusion Regarding the City of Boston
[To be written after results of 2009 telephone survey analysis are complete.]

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241 See, e.g., Adam Reilly, Asians for Yoon -- Or Maybe the Other Guy(s), Boston Phoenix (July 10, 2009) (available at http://thephoenix.com/Boston/News/86242-Asians-for-Yoon-or-maybe-the-other-guys/).

242 Had this article been written in 2008, the picture might have been even clearer, with critical facts including that African-American councilors in the 1990s and 2000s could only succeed if they ran in predominantly black districts, while the lone Hispanic councilor in Boston’s history was elected as an appointed incumbent before becoming the extraordinarily rare incumbent to suffer defeat. 2009 may have changed the picture some, although even after the 2009 election, whites continue to hold nine of 13 seats (and they have never held fewer than nine since Boston went to a 13-member council).

243 See supra note 166.