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The Race-Blind Future of Voting Rights

ABSTRACT. A critical issue in any racial vote-dilution case is the proportionality (or lack thereof) of a minority group's representation: how well (or poorly) minority voters are represented relative to their share of the population. In an important recent opinion, Judge Easterbrook proposed replacing this proportionality benchmark with what we call the "race-blind baseline." Under this approach, minority voters' representation would be compared not to their population share but rather to the fraction of seats they would control if districts were drawn randomly and without the use of racial data. Long critical of the proportionality benchmark, conservative advocates have been quick to embrace Judge Easterbrook's idea. The current Supreme Court, which has already dismantled part of the Voting Rights Act, may also be interested in adopting the race-blind baseline. Yet until now, no one has explored this benchmark's implications: how it would affect minority representation as well as the partisan balance of power.

In this Article, we tackle these questions for the first time. We do so using a technique—the random generation of district maps by a computer algorithm—that has become the gold standard in partisan-gerrymandering cases, but that has not yet been systematically deployed in the context of race and redistricting. We find, first, that in most states, a nonracial redistricting process would yield substantially fewer districts where minority voters are able to elect their preferred candidates. Judge Easterbrook's proposal would thus cause a considerable drop in minority representation. Second, we show that the minority opportunity districts that arise when lines are drawn randomly are quite different from the ones that now exist. They are less likely to pack minority voters and more apt to represent them through coalitions with white voters. And third, contradicting the conventional wisdom about the link between minority and partisan representation, we demonstrate that Democrats would not benefit from the elimination of opportunity districts under the race-blind baseline. Rather, in the southern states where the benchmark would have the biggest impact, it is Republicans who would gain a partisan edge.

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INTRODUCTION

The modern era of voting rights may soon be coming to an end. For more than thirty years, courts have agreed on the baseline for comparison in a racial vote-dilution case. A minority group bringing such a challenge – asserting that its electoral influence has been unlawfully diluted by a set of district lines – must compare its existing representation to the benchmark of *proportional* representation. If the group is represented disproportionally poorly, in that the share of districts it controls is smaller than its fraction of the population, the group's legal claim is significantly bolstered. Conversely, if the group already enjoys close to (or more than) proportional representation, its claim all but collapses.[1]

Conservative Justices on the Supreme Court, however, have never been comfortable with this approach. In their view, the emphasis on whether minority voters control a proportional share of districts is untrue to the text of section 2 of the Voting Rights Act (VRA), which disclaims any "right to have members of a protected class elected in numbers equal to their proportion in the population."[2] Even worse, according to these critics, the proportionality baseline overly racializes the redistricting process. It encourages jurisdictions to draw many districts for racial reasons, thus conveying the message that representation is primarily race based and aggravating racial cleavages in American politics.[3] As Chief Justice Roberts decried in a 2006 case, "It is a sordid business, this divvying us up by race."[4]

To date, the Court's conservatives have been unable to stop the divvying. But thanks to the recent ascensions of Justices Barrett, Gorsuch, and Kavanaugh, their luck may be about to turn. There may now be a solid majority for rethinking vote-dilution law and sharply limiting the scope of section 2. If such reform were to occur, it could plausibly entail the replacement of proportionality with a *race-blind* baseline, asking how many districts minority voters would control if

1. *See, e.g.*, Johnson v. De Grandy, 512 U.S. 997, 1000 (1994) ("While such proportionality is not dispositive in a challenge to single-member districting, it is a relevant fact in the totality of circumstances to be analyzed . . . ."); *id.* at 1025-26 (O'Connor, J., concurring) (agreeing that "[l]ack of proportionality is probative evidence of vote dilution" while "the presence of proportionality" suggests "the absence of dilution").
2. 52 U.S.C. § 10301(b) (2018); *see, e.g.*, Thornburg v. Gingles, 478 U.S. 30, 97 (1986) (O'Connor, J., concurring in the judgment) (characterizing the Court's approach as "inconsistent with . . . § 2's disclaimer of a right to proportional representation").
3. Justice Thomas's fiery concurrence in *Holder v. Hall*, 512 U.S. 874, 892 (1994), is the most famous expression of these views.
4. League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399, 511 (2006) (Roberts, C.J., concurring in part, concurring in the judgment in part, and dissenting in part).

the lines were drawn without *any* consideration of race.[5] The case for liability would then be strongest if a minority group is underrepresented compared to the outcome of a nonracial redistricting process. The case would be much weaker, though, if the group already controls as many districts as would be expected given the application of nonracial mapmaking criteria.

This substitution of a race-blind baseline for a proportional one was proposed most notably by Judge Easterbrook in the 2008 case of *Gonzalez v. City of Aurora*.[6] Posing the question, "Diluted relative to what benchmark?," the conservative jurist answered, "[T]he outcome of a race-neutral process in which all districts are compact."[7] He elaborated that "computers can use census data" to "generate a hundred or a thousand different maps."[8] If these randomly created maps "look something like the actual map" in their racial characteristics, then "we could confidently conclude that [the actual] map did not dilute the effectiveness of the [minority] vote."[9] But if the actual map has fewer minority-controlled districts than most of the simulated maps, then "a court might sensibly conclude that [the jurisdiction] had diluted the [minority] vote."[10]

Judge Easterbrook's suggestion has been echoed by right-wing activists[11] and flagged by legal[12] and political-science[13] scholars. It also dovetails with the conservative critique of the section 2 status quo, being both more faithful to the statutory text (since it eschews proportionality) and less race conscious (since a

5. Of course, even if the *redistricting process* were race blind, the underlying residential patterns onto which district lines are superimposed would remain heavily influenced by racism, segregation, and a host of other race-related factors. *See generally* Nicholas O. Stephanopoulos, *Civil Rights in a Desegregating America*, 83 U. CHI. L. REV. 1329 (2016) (arguing that residential desegregation has played a large role in vote dilution).

6. 535 F.3d 594 (7th Cir. 2008).

7. *Id.* at 598.

8. *Id.* at 599.

9. *Id.* at 600.

10. *Id.*

11. *See, e.g.*, Motion for Leave to File & Brief for Edward Blum, Visiting Fellow at the American Enterprise Institute, and Roger Clegg, President of the Center for Equal Opportunity as Amici Curiae in Opposition to Appellants at 11, League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399 (2006) (No. 05-204) [hereinafter Blum & Clegg Br.] (urging that "race be entirely excluded from consideration in redistricting, which could now be accomplished by specifying race-neutral parameters for lines drawn by a computer").

12. *See, e.g.*, Christopher S. Elmendorf, Kevin M. Quinn & Marisa A. Abrajano, *Racially Polarized Voting*, 83 U. CHI. L. REV. 587, 594, 636, 675 (2016) (repeatedly citing *Gonzalez*, 535 F.3d 594 (7th Cir. 2008)).

13. *See, e.g.*, Jowei Chen & Jonathan Rodden, *Cutting Through the Thicket: Redistricting Simulations and the Detection of Partisan Gerrymanders*, 14 ELECTION L.J. 331, 332, 335 (2015) (also repeatedly citing *Gonzalez*, 535 F.3d 594 (7th Cir. 2008)).

race-blind baseline is, well, race blind). And just a few years after the Supreme Court eviscerated the VRA's other key provision in *Shelby County v. Holder*,[14] the possibility of radical change in the law of vote dilution cannot be discounted. Yet until now, no one has taken Judge Easterbrook's idea seriously. No one has comprehensively analyzed how minority representation could be affected by the move from a proportional to a race-blind baseline. Nor has anyone studied the potential *partisan* implications of this shift: how the major parties could be impacted if the lines were drawn solely on nonracial grounds.

In this Article, then, we investigate these issues for the first time. We do so using the method that Judge Easterbrook outlined in *Gonzalez*: the random generation of large numbers of district maps by a computer algorithm, based exclusively on nonracial criteria. This technique was still in its infancy when Judge Easterbrook referred to it in 2008. In the ensuing decade, however, it has ripened to full maturity. Political scientists, mathematicians, and computer scientists have published dozens of papers introducing redistricting algorithms and applying them to various problems.[15] Courts have also admitted expert testimony about randomly generated district maps—from one of us in more than ten cases[16]—and relied heavily on this evidence in their opinions.[17] Almost all of this litigation has examined whether *partisanship* accounts for the differences between enacted plans and the arrays of simulated maps. No lawsuit (and no academic article) has systematically explored the effects of *race*-blind (rather than party-blind) redistricting. Nor has the legal literature yet employed mapmaking algorithms at anything like this Article's scale, though they are the field's most important development in recent memory.

We include in our study almost all states with sizeable minority populations: the ones for which section 2's requirements are most relevant. We also conduct our analysis at the state-house level because state-house districts are more numerous than their congressional counterparts, enabling a more fine-grained inquiry. For each state we consider, we randomly generate one thousand state-house maps. These maps match or beat each state's enacted plan in terms of

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14. 570 U.S. 529, 556-57 (2013) (striking down the coverage formula that determined which jurisdictions were subject to preclearance under section 5 of the Voting Rights Act).

15. For a recent literature review, see Gowri Ramachandran & Dara Gold, *Using Outlier Analysis to Detect Partisan Gerrymanders: A Survey of Current Approaches and Future Directions*, 17 ELECTION L.J. 286, 293-98 (2018).

16. *See* Expert Report of Jowei Chen, Ph.D. at 1, Whitford v. Gill, No. 15-cv-421-jdp (W.D. Wis. Oct. 15, 2018) [hereinafter Chen *Whitford* Rpt.] (listing the cases in which Chen has participated as an expert witness).

17. *See, e.g.*, Rucho v. Common Cause, 139 S. Ct. 2484, 2517-18 (2019) (Kagan, J., dissenting) (discussing at length Chen's "extreme outlier approach," "which also has recently been used in Michigan and Ohio litigation," and endorsing it as a way to "prove that the districting plan substantially dilutes [the plaintiffs'] votes").

traditional criteria such as population equality, compactness, and respect for political subdivisions. But unlike each enacted plan, these maps completely ignore race. Having produced these sets of comparators, we then bring race back into the picture. In the most extensive application to date of ecological inference, we estimate the voting behavior of minority and nonminority citizens, precinct by precinct, in each state. We use this data to determine the numbers of minority opportunity districts in the enacted plans as well as the simulated maps and then to compare these volumes. We define an opportunity district as one where minority voters are able to elect their candidate of choice because they outnumber nonminority voters within their preferred party, which in turn is the district's majority party.

We find that most—though not all—enacted state-house plans overrepresent minority voters relative to the race-blind baseline. For example, numerous plans in the Deep South include substantially more African American opportunity districts than would typically emerge from a nonracial redistricting process, while a few plans in the Border South include fewer such districts. Similarly, several western states feature extra Hispanic opportunity districts compared to the race-blind baseline, while only one western state underrepresents Hispanic voters. Perhaps our most interesting result, though, has to do with the makeup (not the number) of the opportunity districts in the randomly generated maps. In most cases, these districts have smaller minority populations than the opportunity districts in the enacted plans (albeit still large enough to elect minority-preferred candidates). In other words, the enacted plans' opportunity districts generally pack minority voters beyond the point required by law or geography.

Our findings have significant legal and policy implications. First, current plans that feature more opportunity districts than usually arise when nonracial mapmaking criteria are applied would be highly vulnerable if Judge Easterbrook's proposal were adopted. Some of these plans' opportunity districts could be attacked as unlawful racial gerrymanders, designed with an inordinate racial focus. States could also dismantle some of these plans' opportunity districts with little fear of violating section 2 or the U.S. Constitution. Second, however, current plans that *under*represent minority voters relative to the race-blind baseline could still yield viable section 2 lawsuits. Even in Judge Easterbrook's preferred regime, plaintiffs would be able to show that more opportunity districts would have materialized had the lines only been drawn without considering race. And third, in almost all jurisdictions, mapmakers could use a different strategy to satisfy their section 2 obligations (whether the baseline is race neutrality or proportionality). They could considerably unpack minority voters without sacrificing these voters' abilities to elect their candidates of choice.

What about the *partisan* consequences of the race-blind baseline—how the major parties' legislative representation would be affected by lines drawn on nonracial grounds? To tackle this question, we randomly generate one thousand more state-house maps for each state in our study. These maps again ignore partisanship and match or beat each enacted plan in terms of traditional criteria. But unlike their predecessors, these maps *equal* each enacted plan's number of minority opportunity districts. They are race *conscious*, not race *blind*. In combination, the two sets of simulations allow us to estimate the partisan impact of Judge Easterbrook's idea. The second simulation set extracts party but *not* race from the districting status quo. The first simulation set extracts party *and* race. The difference between the simulation sets thus represents the partisan effect of the race-blind baseline.

We find that, in the Deep South, Republicans would benefit from nonracial redistricting. That is, maps produced without consideration of party or race typically include more Republican districts than maps that ignore partisanship but match the existing number of opportunity districts. In the rest of the country, by contrast, Judge Easterbrook's proposal would have minimal partisan implications. In these areas, maps in the second simulation set (extracting party but not race) have very similar volumes of Democratic and Republican districts to maps in the first simulation set (extracting party and race). So shifting from race-conscious to race-blind redistricting would leave the partisan balance of power largely undisturbed.

Our results challenge the conventional wisdom about the relationship between minority and partisan representation. For roughly a generation, many academics have believed that complying with section 2 (in particular, moving toward its proportionality baseline) advantages Republicans by overconcentrating Democrats in opportunity districts.[18] These scholars would presumably expect redefining section 2 compliance (specifically, swapping a proportional for a race-blind baseline) to assist Democrats by unpacking some opportunity districts. Yet our findings directly contradict this hypothesis. In most of America, implementing Judge Easterbrook's proposal would not improve Democrats' electoral position at all. In the only part of the country where the parties' lots would be affected—the Deep South—it is Republicans who would gain from the switch to the race-blind baseline.

The Article proceeds as follows. In Part I, we identify the conservative critiques of section 2's proportionality baseline. It is these critiques that make its replacement by a race-blind baseline attractive to Judge Easterbrook and like-minded observers. In Part II, we provide more information about the random

18. *See, e.g.*, Adam B. Cox & Richard T. Holden, *Reconsidering Racial and Partisan Gerrymandering*, 78 U. CHI. L. REV. 553, 555 (2011) (noting "a rough consensus" that "drawing districts" in which minority voters are able to elect their preferred candidates "helps minority voters in those districts but hurts the Democratic Party more broadly by packing Democratic supporters into too few districts").

generation of district maps, a technique not previously used at scale in the legal literature. We also explain our methodology, especially our definition of minority opportunity districts. In Part III, we present our results about minority representation: how and why the race-blind baseline would influence states' numbers and types of opportunity districts. On the whole, it would both reduce these districts' volumes and unpack their minority voters. And in Part IV, we turn from minority to partisan representation: how and why the race-blind baseline would alter the parties' fortunes. Here, our findings run against the grain of most prior scholarship.

I. THE LOOMING NARROWING

The premise of this Article is that it is *plausible*—not certain, but well within the realm of possibility—that the traditional proportionality baseline of vote-dilution law will soon be supplanted by a race-blind baseline. If this premise were entirely unrealistic, the implications of nonracial redistricting would still be of academic interest, but they would not matter much to voters, politicians, and others concerned about minority and partisan representation. To defend our motivating assumption, then, we first discuss the conservative dissatisfaction with the section 2 status quo. We noted two grievances above: that the proportionality baseline is inconsistent with the statutory text and that it infuses race into the redistricting process.[19] Two more complaints are that disproportional representation is only weakly probative of discriminatory intent, which should be the crux of a vote-dilution claim; and that to achieve proportionality, jurisdictions must often craft districts that are highly unlikely to arise "naturally."[20]

Next, we present the proposal to substitute a race-blind for a proportional baseline. Judge Easterbrook is the most prominent advocate of this idea, which has also caught the attention of activists and academics (though not (yet) Supreme Court Justices). Lastly, we explain how a race-blind baseline would resolve the conservative objections to vote-dilution law. It would be more in sync with the text of section 2; it would be less race conscious; it would converge on a disparate-treatment (rather than a disparate-impact) theory of liability; and it would no longer require jurisdictions to create "unnatural" districts. From a certain ideological perspective, these would be significant benefits, which is precisely why we think the Article's premise is plausible.[21]

19. *See supra* notes 2-4 and accompanying text.

20. *See infra* note 83.

21. To be clear, in this Article, we are not advocating for any particular legal interpretation of the Voting Rights Act (VRA) or of the framework established by *Thornburg v. Gingles*, 478 U.S.

A. The Conservative Critique

The Supreme Court's first decision about section 2 (since the provision took its current form in 1982[22]), *Thornburg v. Gingles*,[23] is best known for specifying a series of preconditions for liability. These so-called "*Gingles* prongs" require a minority group (1) to be large and compact enough to constitute a majority in an additional district; (2) to be politically cohesive; and (3) to be confronted by white bloc voting.[24] In a less frequently cited passage, however, the Court suggested that even if a group satisfies all three prongs, it will still usually lose its case if it is already proportionally represented (and durably so). Describing a multimember North Carolina state-house district where "the last six elections have resulted in proportional representation for [B]lack residents," the Court stressed the "significance of the sustained success [B]lack voters have experienced."[25] "This persistent proportional representation is inconsistent with [the] allegation that the ability of [B]lack voters in [the district] to elect representatives of their choice" has been diluted.[26]

What the Court intimated in *Gingles*, it confirmed in the 1994 case of *Johnson v. De Grandy*.[27] The plaintiffs were Hispanic voters in Dade County, Florida who met all three *Gingles* prongs; in particular, another Hispanic-majority district could have been drawn in the area.[28] The plaintiffs' vote-dilution claim nevertheless failed because they already "form[ed] effective voting majorities in a number of districts roughly proportional to [their] respective share[] in the voting-age population."[29] Hispanics comprised about half of Dade County's population and controlled nine of eighteen state-house districts in the challenged plan.[30] The Court thus made clear that *maximal* minority representation is not

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30 (1986). Nor are we attempting to predict how any court might interpret the VRA or *Gingles* in the future. Instead, we are merely analyzing the empirical consequences of the hypothetical adoption of a race-blind baseline for minority representation under section 2.

22. *See* Voting Rights Act Amendments of 1982, Pub. L. No. 97-205, § 3, 96 Stat. 131, 134 (codified at 52 U.S.C. § 10301 (2018)). Prior to the 1982 amendments, the Court briefly considered section 2 in *City of Mobile v. Bolden*, 446 U.S. 55, 60-61 (1980) (plurality opinion).

23. 478 U.S. 30 (1986).

24. *See id.* at 48-51. For a detailed examination of *Gingles*'s impact by one of us, see Nicholas O. Stephanopoulos, *Race, Place, and Power*, 68 STAN. L. REV. 1323, 1393-98 (2016).

25. *Gingles*, 478 U.S. at 77 (emphasis omitted).

26. *Id.*

27. 512 U.S. 997 (1994).

28. *See id.* at 1008-09.

29. *Id.* at 1000.

30. *See id.* at 1014.

the relevant benchmark: "Failure to maximize cannot be the measure of § 2."[31] Rather, the share of existing districts in which minority voters are able to elect their preferred candidates must be compared to their fraction of the population.[32] "[P]roportionality in the sense used here is obviously an indication that minority voters have an equal opportunity . . . to 'participate in the political process . . . .'"[33] Likewise, "the degree of probative value assigned to disproportionality . . . will vary . . . with the degree of disproportionality . . . ."[34]

The last key aspect of the proportionality baseline was settled in the 2006 case of *League of United Latin American Citizens v. Perry* (*LULAC*).[35] The plaintiffs were Hispanic voters in Texas who were overrepresented in the state's southwest region (controlling five of seven congressional districts[36]) but underrepresented statewide (since the five "Latino opportunity districts amount[ed] to roughly 16% of the total, while Latinos ma[d]e up 22% of Texas' citizen voting-age population"[37]). The Court therefore had to decide whether proportionality should be evaluated regionally—as *De Grandy* had hinted at but not held[38]—or statewide. The Court "conclude[d] the answer . . . is to look at proportionality statewide."[39] The plaintiffs had "alleged statewide vote dilution based on a statewide plan," so "it ma[de] sense to use the entire State in assessing proportionality."[40] The Hispanic plaintiffs consequently prevailed since their claim was bolstered by their statewide underrepresentation and unharmed by their local overrepresentation.[41]

In an area of law notorious for its many unsolved puzzles,[42] the proportionality baseline stands out for its determinacy. Its importance is undeniable, too,

31. *Id.* at 1017. Or, more colorfully, "[o]ne may suspect vote dilution from political famine, but one is not entitled to suspect (much less infer) dilution from mere failure to guarantee a political feast." *Id.*

32. *See id.* at 1014 n.11.

33. *Id.* at 1020 (quoting 42 U.S.C. § 1973(b) (2018)).

34. *Id.* at 1020 n.17.

35. 548 U.S. 399 (2006).

36. *See id.* at 437.

37. *Id.* at 438.

38. *See id.* at 436 ("Based on the parties' apparent agreement [in *De Grandy*] that the proper frame of reference was the Dade County area, the Court used that area to decide proportionality.").

39. *Id.* at 437.

40. *Id.* at 438.

41. *See id.*

42. *See, e.g.*, Christopher S. Elmendorf, *Making Sense of Section 2: Of Biased Votes, Unconstitutional Elections, and Common Law Statutes*, 160 U. PA. L. REV. 377, 389 (2012) (noting the lack of any "authoritative resolution of the basic questions one would need to answer to make sense of the results test").

because more than any other doctrinal factor, it sets the level of representation to which minority voters are legally entitled.[43] As Justice Thomas remarked in his famous concurrence in the 1994 case of *Holder v. Hall*, "'[H]ow many' is the critical issue" in any vote-dilution suit.[44] The proportionality baseline largely decides the issue because it specifies the "'proper' number of seats—that is, the number of seats that the minority's percentage of the population would enable it to control in the benchmark 'fair' system."[45]

Justice Thomas's concurrence is famous, however, not for endorsing this approach but rather for decrying it.[46] In fact, he and other conservative Justices have bitterly opposed the proportionality baseline ever since its adoption, for several reasons and over many cases. Justice O'Connor raised perhaps the most obvious objection in her opinion in *Gingles* itself. Section 2's language, she pointed out, explicitly disavows any "right to have members of a protected class elected in numbers equal to their proportion in the population."[47] This disavowal, moreover, was "essential to the compromise that resulted in passage of the [provision]."[48] So by "requiring a form of proportional representation," the Court's standard is allegedly "inconsistent with . . . § 2's disclaimer of a right to proportional representation."[49] The Court's standard "strikes a different balance than Congress intended to when it . . . disclaimed any right to proportional representation under § 2."[50]

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43. *See, e.g.*, Ellen Katz, Margaret Aisenbrey, Anna Baldwin, Emma Cheuse & Anna Weisbrodt, *Documenting Discrimination in Voting: Judicial Findings Under Section 2 of the Voting Rights Act Since 1982*, 39 U. MICH. J.L. REFORM 643, 730-31 (2006) (observing that, in the lower courts, every decision that found proportionality identified no violation of section 2, while almost every decision that found a lack of proportionality concluded that section 2 was infringed).

44. 512 U.S. 874, 902 (1994) (Thomas, J., concurring in the judgment).

45. *Id.* The proportionality baseline does not entirely decide the issue because the representation to which minority voters are legally entitled also depends on their geographic distribution and their polarization from nonminority voters. *See* Stephanopoulos, *supra* note 24, at 1333-39.

46. Indeed, Justice Thomas endorsed a position even more radical than the adoption of the race-blind baseline: the outright *elimination* of racial vote dilution as an actionable injury under the Voting Rights Act. *See Holder*, 512 U.S. at 892 (Thomas, J., concurring in the judgment).

47. Thornburg v. Gingles, 478 U.S. 30, 95-96 (1986) (O'Connor, J., concurring in the judgment) (quoting 52 U.S.C. § 10301(b) (2018)).

48. *Id.* at 84 (citing S. REP. No. 97-417, at 193-94 (1982)).

49. *Id.* at 97.

50. *Id.* at 105. The Court responded to this textual objection in *De Grandy*. The proportionality baseline "is distinct from the subject of the proportional representation clause of § 2" because that clause "speaks to the success of minority candidates, as distinct from the political or electoral power of minority voters." Johnson v. De Grandy, 512 U.S. 997, 1014 n.11 (1994). In other words, the proportionality baseline considers in how many districts minority *voters* are able to elect their preferred candidates, not in how many districts minority *candidates* are elected.

Justice Kennedy advanced another textual criticism of the proportionality baseline in a 2003 case. He observed that, for jurisdictions to comply with the baseline, "race" must often be "a predominant factor in drawing the lines."[51] Yet by relying so heavily on race—by intentionally designing districts in which minority voters may elect their preferred candidates—jurisdictions supposedly enact electoral regulations "on account of race or color" in violation of section 2.[52] Jurisdictions' race-conscious efforts to achieve proportionality thus provide "sound reason to conclude that [a section 2] challenge would succeed" against their district maps.[53] Their "considerations of race . . . doom a redistricting plan under . . . § 2."[54]

While Justice Kennedy framed this point in narrow textual terms, it may also be expressed more abstractly. On this view, section 2, as amended in 1982, is a disparate-treatment, not a disparate-impact, provision—a law that seeks to eliminate racially discriminatory intent, not racially unequal results.[55] Consequently, the *Gingles* factors and the rest of section 2's doctrinal elements are ways to probe for an invidious purpose in a context where such an aim is rarely admitted openly by government officials. Plainly, the proportionality baseline clashes with this understanding of section 2. The presence or absence of minority-controlled districts in proportion to minority members' share of the population is a quintessentially outcome-oriented issue. It also sheds little light on whether districts may have been drawn with racially discriminatory intent since so many factors beyond an invidious purpose may affect the proportionality of minority members' representation. Accordingly, the disparate-treatment conception of section 2, at the very least, creates no need for the proportionality baseline and may even render it unlawful.[56]

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51. Georgia v. Ashcroft, 539 U.S. 461, 491 (2003) (Kennedy, J., concurring).

52. 52 U.S.C. § 10301(a) (2018).

53. *Ashcroft*, 539 U.S. at 491 (Kennedy, J., concurring).

54. *Id.*

55. Several lower courts have construed section 2 as a disparate-treatment provision. *See, e.g.*, Frank v. Walker, 768 F.3d 744, 754 (7th Cir. 2014) ("It is better to understand [section 2] as an equal-treatment requirement (which is how it reads) than as an equal-outcome command . . . ."); Nipper v. Smith, 39 F.3d 1494, 1497 (11th Cir. 1994) (en banc) (requiring section 2 litigants to "demonstrate that the voting community is driven by racial bias"). Scholars have also commented on "the distinction between 'nondiscrimination' and 'affirmative action' in VRA enforcement," even arguing that "the Court has rejected the outcome-oriented interpretation of equal rights in redistricting." Richard H. Pildes, *Principled Limitations on Racial and Partisan Redistricting*, 106 YALE L.J. 2505, 2523-25 (1997).

56. The decisive response to the disparate-treatment conception is that section 2 is plainly a disparate-*impact* provision, banning practices that "*result[] in* a denial or abridgement of the right . . . to vote on account of race or color." 52 U.S.C. § 10301(a) (2018) (emphasis added).

To date, Justice Kennedy is the only member of the Court to have construed section 2 as a disparate-treatment provision. Several Justices, though, have expressed similar concerns for constitutional instead of statutory reasons. From this angle, the problem with deliberately designing minority-controlled districts in order to attain proportionality is not that doing so infringes section 2; it is that the Equal Protection Clause is thereby breached. Justice Thomas made this argument at greatest length in his impassioned concurrence in *Holder*. Through its emphasis on proportionality, he claimed, the Court has undertaken an "enterprise of systematically dividing the country into electoral districts along racial lines."[57] This campaign conveys the message that "members of racial and ethnic groups must all think alike . . . and must have their own 'minority preferred' representatives."[58] It also "deepen[s] racial divisions by destroying any need for voters or candidates to build bridges between racial groups."[59]

Justice Kennedy articulated a similar (if tamer) version of this point in his concurrence in *De Grandy*. Thanks to the proportionality baseline, "[s]tates might consider it lawful and proper to act with the explicit goal of creating a proportional number of majority-minority districts in an effort to avoid § 2 litigation."[60] "Those governmental actions," however, "tend to entrench the very practices and stereotypes the Equal Protection Clause is set against."[61] Chief Justice Roberts's quip in *LULAC* about the "sordid business" of "divvying us up by race" reflects the same constitutional misgivings.[62] It is the priority assigned to

Indeed, the whole point of section 2's amendment in 1982 was to override the Court's plurality opinion in *City of Mobile v. Bolden*, 446 U.S. 55 (1980), which had required discriminatory intent for the provision to be violated. "Congress substantially revised § 2 to make clear that a violation could be proved by showing discriminatory effect alone." Thornburg v. Gingles, 478 U.S. 30, 35 (1986).

57. Holder v. Hall, 512 U.S. 874, 905 (1994) (Thomas, J., concurring in the judgment); *see also* Shaw v. Reno, 509 U.S. 630, 647 (1993) (arguing that racial gerrymandering to increase minority representation "bears an uncomfortable resemblance to political apartheid").

58. *Holder*, 512 U.S. at 903 (Thomas, J., concurring in the judgment); *see also Shaw*, 509 U.S. at 647 (arguing that racial gerrymandering "reinforces the perception that members of the same racial group . . . think alike [and] share the same political interests").

59. *Holder*, 512 U.S. at 907 (Thomas, J., concurring in the judgment); *see also Shaw*, 509 U.S. at 657 ("Racial gerrymandering . . . may balkanize us into competing racial factions . . . .").

60. Johnson v. De Grandy, 512 U.S. 997, 1029 (1994) (Kennedy, J., concurring in part and concurring in the judgment).

61. *Id.*; *see also id.* ("[T]he sorting of persons with an intent to divide by reason of race raises the most serious constitutional questions.").

62. 548 U.S. 399, 511 (2006) (Roberts, C.J., concurring in part, concurring in the judgment in part, and dissenting in part).

proportionality that requires the divvying—and it is the equal-protection norm of colorblindness that ostensibly renders the divvying sordid.[63]

A final conservative objection is rooted in certain Justices' intuition about how districts ought to look. In their opinion, districts ought to be "reasonably compact and regular, taking into account traditional districting principles such as maintaining communities of interest and traditional boundaries."[64] That way, districts mirror the political geography of their surrounding regions, make sense to voters and legislators, and avoid the evils that purportedly follow from excessive racialization. The proportionality baseline, though, conflicts with this model. Minority-controlled districts crafted to achieve proportionality often "disregard[] traditional districting principles such as compactness, contiguity, and respect for political subdivisions."[65] These "[s]ignificant deviations from traditional districting principles . . . cause constitutional harm insofar as they convey the message that political identity is, or should be, predominantly racial."[66]

Pursuant to this logic, the Court has struck down several majority-minority districts and deemed others improper as remedies for section 2 violations. The invalidated districts include one in North Carolina that looped "in snakelike fashion through tobacco country, financial centers, and manufacturing areas"[67] and another in Georgia that "connect[ed] the [B]lack neighborhoods of metropolitan Atlanta and the poor [B]lack populace of coastal Chatham County, though 260 miles apart in distance and worlds apart in culture."[68] Similarly, an inapt remedial district in Texas was "a long, narrow strip that w[ou]nd[] its way from McAllen and the Mexican-border towns in the south to Austin, in the center of the State and 300 miles away."[69] All of these districts were shaped in the shadow of the proportionality baseline. And all of them offended the Court

63. The strongest response to this racialization critique is to change the equal-protection frame from anticlassification to antisubordination. *See generally* Jack M. Balkin & Reva B. Siegel, *The American Civil Rights Tradition: Anticlassification or Antisubordination?*, 58 U. MIAMI L. REV. 9 (2003). A highly racialized redistricting process does classify by race—but, sometimes, to improve minority representation and thus to combat racial subordination.

64. Bush v. Vera, 517 U.S. 952, 977 (1996) (plurality opinion) (emphasis omitted).

65. Shaw v. Reno, 509 U.S. 630, 647 (1993).

66. *Bush*, 517 U.S. at 980.

67. *Shaw*, 509 U.S. at 635.

68. Miller v. Johnson, 515 U.S. 900, 908 (1995).

69. League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399, 424 (2006).

because of their noncompliance with traditional criteria, thus confirming that "reapportionment is one area in which appearances do matter."[70]

B. The Race-Blind Baseline

Over the generation since *Gingles*, these conservative criticisms have led the Court to narrow section 2's scope in several ways. In the cases just cited, the Court held that section 2 requires jurisdictions only to design minority-controlled districts that are reasonably compliant with traditional districting principles.[71] In *LULAC*, the Court ruled (among other things) that section 2 never compels jurisdictions to form "influence" districts in which minority voters have sway—but not control—over which candidate is elected.[72] And in a 2009 case, the Court concluded that to satisfy the first *Gingles* prong, a racial group must be large enough to comprise an outright majority (not merely a controlling minority) of an additional district's population.[73]

These restrictions, however, have not reached the proportionality baseline. Though it has been under assault for more than thirty years, it still remains in place, inducing jurisdictions to create for minority voters a share of districts proportional to their fraction of the population. As a result, the limits that conservative Justices *have* won may fairly be described as fiddling at the margins. The proportionality baseline is the engine of section 2: the doctrinal element that

70. *Shaw*, 509 U.S. at 647. For a more detailed discussion of these cases by one of us, see Nicholas O. Stephanopoulos, *Redistricting and the Territorial Community*, 160 U. PA. L. REV. 1379, 1416-21 (2012). The best response to this critique is simply that proportionality is more important than compliance with traditional criteria—that district aesthetics matter less than improving representation for historically subordinated minorities.

71. As the Court put it in *Bush*, "If, because of the dispersion of the minority population, a reasonably compact majority-minority district cannot be created, § 2 does not require a majority-minority district." 517 U.S. at 979 (plurality opinion); *see also id.* at 977 (requiring that "[a] § 2 district . . . [be] *reasonably* compact and regular, taking into account traditional districting principles such as maintaining communities of interest and traditional boundaries").

72. *See LULAC*, 548 U.S. at 445 (plurality opinion) ("The opportunity 'to elect representatives of their choice' . . . requires more than the ability to influence the outcome between some candidates, none of whom is their candidate of choice." (citation omitted)). One reason for the Court's holding was its view that if section 2 extended to influence districts, "it would unnecessarily infuse race into virtually every redistricting, raising serious constitutional questions." *Id.* at 446.

73. Bartlett v. Strickland, 556 U.S. 1, 26 (2009) (plurality opinion) ("Only when a geographically compact group of minority voters could form a majority in a single-member district has the first *Gingles* requirement been met."). Again, the Court's holding was motivated in part by its belief that "[i]f § 2 were interpreted to require crossover districts," the redistricting process would become overly racialized. *Id.* at 21.

pushes, in most circumstances, for greater minority representation.[74] And this motor continues to run despite the constraints that have been imposed on other aspects of vote-dilution law.

But maybe not for long. Now that Justices Barrett, Gorsuch, and Kavanaugh have joined the Court, there may finally be a majority in favor of challenging the proportionality baseline itself. If such sweeping change were to occur, its most probable form would be the replacement of proportionality with a race-blind baseline. This, of course, was Judge Easterbrook's proposal in *Gonzalez*, and it is the only alternative to proportionality currently on the table. Under this approach, it would still be necessary to compute the share of districts already controlled by minority voters. But this share then would *not* be compared to minority voters' fraction of the population. Instead, it would be compared to the share of minority-controlled districts in the typical plan generated entirely on the basis of nonracial criteria. Computer simulations would be the most obvious (and perhaps the only possible) way to identify this typical plan. And if minority plaintiffs were underrepresented compared to the race-blind baseline, then their section 2 claim would be strengthened. But their suit would lose much of its force if they already enjoyed about as much representation as they could expect from a nonracial redistricting process.[75]

The facts of *Gonzalez* show more concretely how Judge Easterbrook's idea would operate (and how it would diverge from the status quo). Hispanics made up 16% of the citizen voting-age population of Aurora, Illinois and controlled one of ten single-member city-council districts.[76] They were therefore moderately underrepresented compared to the baseline of proportionality: a fact that would bolster their vote-dilution claim under current law. To determine Hispanic representation relative to the race-blind baseline, on the other hand, a large number of district maps would have to be produced randomly using nonracial criteria. "Suppose that after 1,000 different maps of Aurora's wards have been generated, 10% have two or three 'safe' districts for Latinos and the other 90% look something like the actual map" with its "one safe district."[77] "Then we could confidently conclude that Aurora's map did not dilute the effectiveness of the Latino vote."[78] But imagine instead that "the random, race-blind

74. The proportionality baseline generally pushes for greater minority representation because minority voters are currently underrepresented in virtually every statewide legislative body. *See, e.g.*, Stephanopoulos, *supra* note 24, at 1370-71 (showing Black and Hispanic underrepresentation in state houses in 1975, 1995, and 2015).

75. *See* Gonzalez v. City of Aurora, 535 F.3d 594, 599-600 (7th Cir. 2008) (describing similarly the logic of a race-blind baseline).

76. *Id.* at 596.

77. *Id.* at 600.

78. *Id.*

exercise . . . yields three 'Latino effective' districts at least 50% of the time."[79] "Then a court might sensibly conclude that Aurora had diluted the Latino vote by undermining the normal effects of the choices that Aurora's citizens had made about where to live."[80]

At first glance, Judge Easterbrook's proposal may seem farfetched. Is it really possible to evaluate a minority group's representation using a vast array of plans churned out by a computer? In fact, this was *not* possible in 2008, when *Gonzalez* was decided, at least if one wished to employ a broader set of requirements than merely contiguity, compactness, and equal population. But as we discuss below in Part II, mapmaking methods have advanced in leaps and bounds over the last ten years.[81] It is now feasible to generate district maps randomly based on many more criteria than a decade ago: respect for county boundaries, respect for municipal boundaries, avoidance of incumbent pairings, partisan fairness, electoral competitiveness, and so on. The state of the art has thus caught up with judicial speculation. Technology is no longer a barrier to the implementation of a race-blind baseline.

Further lending credibility to Judge Easterbrook's idea is the reception it has received from legal elites. Edward Blum, the Director of the Project on Fair Representation, and Roger Clegg, the President of the Center for Equal Opportunity—arguably the two most prominent right-wing activists in the voting-rights field—jointly filed an amicus brief endorsing the proposition that "race be entirely excluded from consideration in redistricting."[82] This "could now be accomplished," they added, "by specifying race-neutral parameters for lines drawn by a computer, ideally without reference to preserving existing majority-minority districts."[83] In the academy, similarly, well-known law professors and political scientists including Marisa Abrajano, Chris Elmendorf, Mike Pitts, Kevin Quinn, Jonathan Rodden (in an article coauthored with one of us), and Doug Spencer have addressed the applicability of redistricting algorithms to section 2

79. *Id.*

80. *Id.*

81. *See infra* Section II.A.

82. Blum & Clegg Br., *supra* note 11, at 11.

83. *Id.* Conservatives have similarly argued that both section 2 and section 5 protect only "naturally occurring majority-minority districts." Computer simulations are the most intuitive way to determine which districts are or are not "naturally occurring." *See, e.g.*, S. REP. NO. 109-295, at 21 (2006) (contending on behalf of Republican senators that section 5 has "a limited but important purpose: protecting naturally occurring majority-minority districts"); Brief of Florida House of Representatives in Support of Respondents at 26, Bartlett v. Strickland, 556 U.S. 1 (2009) (No. 07-689) ("[T]he purpose of [section 2] is to prevent discrimination by protecting naturally occurring, compact majority-minority districts from being diluted through redistricting.").

issues.[84] Far from dismissing the prospect, the consensus in the literature is that computerized mapmaking certainly could (but not necessarily should) become part of vote-dilution law.[85]

The most important reason why the race-blind baseline is a plausible reform, though, is that it allays all of the conservative concerns outlined earlier.[86] Consider Justice O'Connor's textual argument that the proportionality baseline is at odds with section 2's disavowal of proportional representation.[87] This claim is plainly inapplicable to the race-blind baseline. There is no tension between *ignoring* race and abjuring any "right to have members of a protected class elected in numbers equal to their proportion in the population."[88]

Or take Justice Kennedy's position that section 2 is best understood as a disparate-treatment provision, prohibiting discriminatory intent, not as a disparate-impact law, banning discriminatory effect.[89] To comply with the race-blind baseline, jurisdictions would not have to analyze race at all. They would therefore be immune from charges that their line-drawing processes were so race conscious that they violated section 2. Moreover, if jurisdictions' plans *did* include fewer minority-controlled districts than most computer-simulated maps, then it could reasonably be inferred that the plans were designed with a racially discriminatory purpose. Why else, after all, would the plans have fallen short of the race-blind baseline? Section 2 liability would thus attach only in circumstances

84. *See, e.g.*, Chen & Rodden, *supra* note 13, at 335-44; Elmendorf, *supra* note 42, at 391 n.64; Elmendorf et al., *supra* note 12, at 594, 636, 675, 678; Christopher S. Elmendorf & Douglas M. Spencer, *Administering Section 2 of the Voting Rights Act After* Shelby County, 115 COLUM. L. REV. 2143, 2176 n.151 (2015); Michael J. Pitts, *Rescuing Retrogression*, 43 FLA. ST. U. L. REV. 741, 751 n.52, 755 n.72 (2016).

85. *See, e.g.*, Chen & Rodden, *supra* note 13, at 335 (referring to "computer simulations" as "an attractive way to establish . . . a baseline"); Elmendorf et al., *supra* note 12, at 675 (noting that "[a] court . . . might ask . . . whether the number of majority-minority districts is roughly equivalent to the number likely to have been created by a race-neutral redistricting algorithm").

86. *See supra* Section I.A.

87. *See supra* notes 47-50 and accompanying text. Justice O'Connor's concurrence in *Gingles* also arguably anticipated the race-blind baseline. To determine whether an enacted plan is dilutive, she wrote, a "court might . . . consider a range of acceptable plans" and "attempt to calculate how many candidates preferred by the minority group would probably be elected under [these] scheme[s]." Thornburg v. Gingles, 478 U.S. 30, 89 (1986) (O'Connor, J., concurring in the judgment).

88. 52 U.S.C. § 10301(b) (2018).

89. *See supra* notes 51-56 and accompanying text.

strongly suggestive of invidious intent—where disparate treatment (not just disparate impact) most likely occurred.[90]

The same reasoning holds with respect to the constitutional (rather than the statutory) racialization critique.[91] Districts drawn on nonracial grounds and conforming to the race-blind baseline could not possibly convey the message that alarmed Justice Thomas in *Holder*: that representation is and should be based on race.[92] Nor could such districts perpetuate the racial stereotypes that worried Justice Kennedy in *De Grandy*[93] or constitute the "sordid" racial "divvying" that Chief Justice Roberts denounced in *LULAC*.[94] All of these equal-protection harms stem from *using* race to create *more* minority-controlled districts than would otherwise be expected to arise. The injuries could not materialize if race were omitted from consideration and minority voters controlled a share of districts consistent with a nonracial-mapmaking process.

Lastly, the fear that traditional districting criteria may be flouted for racial reasons[95] would fade as well if the race-blind baseline were substituted for proportionality. A desire to attain proportionality may motivate jurisdictions to craft minority-controlled districts that look strange or disregard political subdivisions or communities of interest.[96] The race-blind baseline, in contrast, would yield no such incentive. Jurisdictions would only have to *follow* traditional districting principles to adhere to the baseline—to draw reasonably shaped districts and let the minority-representation chips fall where they may. Jurisdictions would never have to compromise district form to achieve any racial goal.

To be clear, we do not endorse the conservative objections to the proportionality baseline. In the margins above, in fact, we noted a series of compelling

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90. This is exactly how redistricting algorithms have already been used in malapportionment and partisan-gerrymandering cases: to create an inference of discriminatory intent when enacted plans differ significantly from most simulated maps. *See, e.g.*, Raleigh Wake Citizens Ass'n v. Wake Cty. Bd. of Elections, 827 F.3d 333, 344 (4th Cir. 2016) (holding that certain districts were improperly drawn based on Chen's conclusion "that the [population] deviations at issue here are the result of using partisanship in apportioning the districts"); Common Cause v. Rucho, 318 F. Supp. 3d 777, 876 (M.D.N.C. 2018), *rev'd*, 139 S. Ct. 2484 (2019) (finding that the "analyses" by Chen "provide compelling evidence that the [North Carolina] General Assembly's predominant intent in drawing and enacting the 2016 [Congressional] Plan was to subordinate the interests of non-Republican voters").

91. *See supra* notes 57-63 and accompanying text.

92. *See* Holder v. Hall, 512 U.S. 874, 903-04 (1994) (Thomas, J., concurring in the judgment).

93. *See* Johnson v. De Grandy, 512 U.S. 997, 1029 (1994) (Kennedy, J., concurring in part and concurring in the judgment).

94. *See* League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399, 511 (2006) (Roberts, C.J., concurring in part, concurring in the judgment in part, and dissenting in part).

95. *See supra* notes 64-70 and accompanying text.

96. *See id.*

responses to each point.[97] Nor do we find the race-blind baseline normatively appealing because it neutralizes the right-wing criticisms. That conclusion would follow only if we were somehow convinced by the criticisms, despite their numerous shortcomings. And our argument is simply that it is plausible that the Court will soon adopt the race-blind baseline—not that the Court's embrace of that benchmark is certain or imminent. The Court could restrict the scope of section 2 in other ways, like requiring racial polarization in voting (the crux of the second and third *Gingles* prongs) to be caused by voters' racial prejudice[98] or even striking down section 2 for exceeding Congress's enforcement authority under the Reconstruction Amendments.[99] The Court could also choose not to disturb vote-dilution law: to spend its limited capital on reform projects unrelated to voting rights.[100] All of these scenarios are entirely conceivable, which is why we advance only the modest claim of plausibility.

II. THE PROMISE OF RANDOMIZED REDISTRICTING

If the Court did switch to the race-blind baseline, the random generation of district plans would become legally critical. This is the technique to which Judge Easterbrook alluded in *Gonzalez*, and there is no better way to determine the likely outcome of a nonracial redistricting process. In this Part, then, we first discuss the history and the logic of simulating large numbers of district maps through computer algorithms. The method was pioneered in the 1960s, though it has only recently become possible to specify more elaborate criteria or to assemble districts from smaller geographic units. The usual idea is to compare maps created *without* considering a given variable (like race) with the enacted plan, which presumably *did* take that factor into account. The difference between the simulated maps and the enacted plan then represents the best estimate of the factor's impact.

After introducing randomized redistricting, we describe our own methodology. We examine almost all states with substantial African American or Hispanic populations, spanning a wide range of regions and mapmaking institutions. We analyze these states' plans for their state houses, which have many more seats

97. *See supra* notes 50, 56, 63, 70.

98. Certain lower courts already impose this requirement. *See* Elmendorf et al., *supra* note 12, at 633-34 (discussing the "voter-discrimination theory" adopted by four circuits).

99. *See* Nicholas O. Stephanopoulos, *Disparate Impact, Unified Law*, 128 YALE L.J. 1566, 1590-94 (2019) (discussing this possibility in the context of racial vote denial).

100. *Cf.* Richard H. Pildes, *The Decline of Legally Mandated Minority Representation*, 68 OHIO ST. L.J. 1139, 1159 (2007) (noting that after *Gingles*, "the system ran on a form of automatic pilot" for decades because while "strong support for *Gingles* in the Court . . . lasted only for a brief moment," "the Court was not pressed to revisit any of [*Gingles*'s] premises").

(enabling a much more nuanced study) than their congressional delegations. We employ a refined version of the redistricting algorithm that one of us has developed in a series of expert engagements. And we program the algorithm to match or beat each enacted plan in terms of population equality, compactness, county splits, and municipality splits—but, consistent with the race-blind baseline, not to consider race at all.

A. Emergence

Interestingly, the possibility of producing random computer-simulated district maps was first flagged more than half a century ago. Writing in 1961, the economist (and future Nobel laureate) William Vickrey suggested that a census tract could be chosen by chance and combined with nearby tracts to form a compact district of suitable population.[101] This process could then be repeated until an entire map emerged, thus "eliminat[ing] the element of human discretion" and "mak[ing] gerrymandering virtually impossible."[102] Just a few years later, other scholars began to implement Vickrey's proposal on a small scale. They typically took existing plans and used computer algorithms to trade towns or counties from one district to another. These swaps were conducted based on criteria like population equality and compactness, yielding an array of reasonable-looking maps that satisfied the one-person, one-vote rule.[103]

The early excitement about randomized redistricting, however, soon dissipated.[104] One issue was that computer algorithms in the 1970s, 1980s, and 1990s were only able to operationalize a few criteria: contiguity, equal population, and (sometimes) compactness.[105] Actual district plans, though, may be subject to

101. *See* William Vickrey, *On the Prevention of Gerrymandering*, 76 POL. SCI. Q. 105, 106-07 (1961).

102. *Id.* at 108.

103. *See, e.g.*, Stuart S. Nagel, *Simplified Bipartisan Computer Redistricting*, 17 STAN. L. REV. 863, 870-89 (1965) (describing this technique); James B. Weaver & Sidney W. Hess, *A Procedure for Nonpartisan Districting: Development of Computer Techniques*, 72 YALE L.J. 288, 302-04 (1963) (same).

104. *See, e.g.*, Yan Y. Liu, Wendy K. Tam Cho & Shaowen Wang, *PEAR: A Massively Parallel Evolutionary Computation Approach for Political Redistricting Optimization and Analysis*, 30 SWARM & EVOLUTIONARY COMPUTATION 78, 79 (2016) ("In the 1960s, though enthusiasm was high, progress was essentially halted by computing technology that was insufficiently advanced to permit nuanced and helpful guidance for actual redistricting problems.").

105. *See, e.g.*, Micah Altman, Brian Amos, Michael P. McDonald & Daniel A. Smith, Revealing Preferences: Why Gerrymanders Are Hard to Prove, and What to Do About It 28 (Mar. 23, 2015) (unpublished manuscript), https://ssrn.com/abstract=2583528 [https://perma.cc/4T29-584T] (observing that, to this day, "some automated approaches attempt to draw only contiguous, compact, and equal population districts").

other, more complicated legal requirements.[106] A more vexing problem for these early algorithms was that it was too computationally taxing to assemble districts from the small building blocks (like census tracts or electoral precincts) that real mapmakers tend to use.[107] The era's algorithms thus mostly relied on counties with their much larger populations—and not many counties either, since as a 1970 paper lamented, "problems become very difficult and require more computer time than we could afford" with more than fifty building blocks.[108] It was not until 2000 that scholars managed to generate district maps from subcounty units (and, even then, only for a single state).[109] It took until *2013* (five years after Judge Easterbrook's opinion in *Gonzalez*) for one of us to publish the first article surveying many states and creating computer-simulated maps from precincts rather than counties.[110]

Since 2013, scholars have developed a number of algorithmic approaches for producing randomized district maps. One technique is essentially what Vickrey envisioned in 1961. Precincts are chosen by chance and merged with adjacent precincts to form districts that meet criteria like compactness and respect for county and municipality boundaries. Precincts are then traded between neighboring districts to achieve population equality without unduly compromising other aims. Each use of this method produces a separate district map. If the algorithm is run repeatedly, it returns many maps, all different from one another yet consistent with the parameters set by the programmer.[111]

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106. These include the federal Voting Rights Act and a plethora of state laws. *See Redistricting Law 2010*, NAT'L CONF. ST. LEGISLATURES 163-217 (2009), https://www.ncsl.org/Portals/1/Documents/Redistricting/Redistricting_2010.pdf [https://perma.cc/2VJN-R4CN] (listing these state laws).

107. *See, e.g.*, Wendy K. Tam Cho & Yan Y. Liu, *Toward a Talismanic Redistricting Tool: A Computational Method for Identifying Extreme Redistricting Plans*, 15 ELECTION L.J. 351, 355 (2016) (noting that older algorithms "conducted their analysis at the level of counties, a level at which no actual redistricting is conducted").

108. R.S. Garfinkel & G.L. Nemhauser, *Optimal Political Districting by Implicit Enumeration Techniques*, 16 MGMT. SCI. B-495, B-506 (1970); *see also* John R. Birge, *Redistricting to Maximize the Preservation of Political Boundaries*, 12 SOC. SCI. RES. 205, 207 (1983) (using counties as building blocks); Anuj Mehrotra, Ellis L. Johnson & George L. Nemhauser, *An Optimization Based Heuristic for Political Districting*, 44 MGMT. SCI. 1100, 1105 (1998) (same).

109. *See* Carmen Cirincione, Thomas A. Darling & Timothy G. O'Rourke, *Assessing South Carolina's 1990s Congressional Districting*, 19 POL. GEOGRAPHY 189, 198 n.5 (2000) ("[N]o other application has used a unit as small (census block groups) as we have to generate plans on a statewide basis.").

110. *See* Jowei Chen & Jonathan Rodden, *Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures*, 8 Q.J. POL. SCI. 239, 240 (2013).

111. For good descriptions of this approach, see *id.* at 249-51; and Cirincione et al., *supra* note 109, at 195-200. For works noting the approach's predominance in the literature, see Altman et al., Another approach, known as a Markov chain Monte Carlo (MCMC) algorithm, starts with an existing district plan, which may be an enacted plan or another district configuration. It then randomly perturbs this plan, altering its districts while still satisfying requirements like compactness and respect for county and municipality boundaries. This perturbation results in a new map, which the algorithm subsequently perturbs again. This iterative sequence is repeated thousands or even millions of times, yielding an additional map with each set of changes to the prior lines. This technique generates representative samples of maps using a single long series of iterations that begins with the initial plan and terminates wherever the random walk ends.[112]

Variations on this MCMC method always amend an existing map, then amend the map that arises, and so on for as many iterations as the programmer wishes. These alternative approaches differ, though, in the kinds of revisions they make. For example, one version of the MCMC algorithm considers an iterative sequence of perturbations, each of which is either accepted or rejected according to an "acceptance probability" that depends on various districting

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supra note 105, at 26, which states, "A gerrymandering detection method of increasing popularity among scholars is to implement a computer algorithm to generate in a random fashion a large number of post-hoc redistricting plans . . . ;" and Benjamin Fifield, Michael Higgins, Kosuke Imai & Alexander Tarr, *Automated Redistricting Simulation Using Markov Chain Monte Carlo*, 2020 J. COMPUTATIONAL & GRAPHICAL STAT. 1, 2, which states, "[M]ost of these existing studies use essentially the same Monte Carlo simulation algorithm where a geographical unit is randomly selected as a 'seed' for each district and then neighboring units are added to contiguously grow this district until it reaches the prespecified population threshold." The Better Automated Redistricting (BARD) software created by Micah Altman and Michael McDonald uses the approach too (though it offers optimization algorithms as well). *See* Micah Altman & Michael P. McDonald, *BARD: Better Automated Redistricting*, 42 J. STAT. SOFTWARE 1, 2-4 (2011).

112. *See, e.g.*, Sachet Bangia, Christy Vaughn Graves, Gregory Herschlag, Han Sung Kang, Justin Luo, Jonathan C. Mattingly & Robert Ravier, *Redistricting: Drawing the Line*, ARXIV 13-20 (May 8, 2017), https://arxiv.org/pdf/1704.03360.pdf [https://perma.cc/V847-N5GP] (describing Markov chain Monte Carlo (MCMC) in greater detail); Maria Chikina, Alan Frieze & Wesley Pegden, *Assessing Significance in a Markov Chain Without Mixing*, 114 PROC. NAT'L ACAD. SCI. 2860, 2860-64 (2017) (same); Andrew Chin, Gregory Herschlag & Jonathan Mattingly, *The Signature of Gerrymandering in* Rucho v. Common Cause, 70 S.C. L. REV. 1241, 1262-64 (2019) (same); Daryl DeFord, Moon Duchin & Justin Solomon, *Recombination: A Family of Markov Chains for Redistricting*, METRIC GEOMETRY & GERRYMANDERING GROUP 6-7 (Mar. 27, 2020), https://mggg.org/uploads/ReCom.pdf [https://perma.cc/9NAG-BY6C] (same); Fifield et al., *supra* note 111, at 3-13 (same). An advantage of an MCMC algorithm is that, if it runs for long enough, it produces a set of district maps that are representative of the entire underlying distribution. *See, e.g.*, Bangia et al., *supra*, at 27 (claiming "strong evidence that we have properly sampled the probability distribution of redistrictings"); Fifield et al., *supra* note 111, at 2 ("[T]he proposed algorithms are designed to yield a representative sample of redistricting plans under contiguity and equal population constraints.").

criteria such as population equality, contiguity, and compactness.[113] Another procedure is to automatically reject any proposed iterative changes that would violate certain districting criteria.[114] Yet another technique involves iterative alterations to a district map that *optimize* along one or more dimensions. Each proposed change thus is not accepted automatically; to the contrary, it is adopted only if it leads to improvement in the scoring function defined by the programmer.[115]

While these algorithmic approaches differ in certain respects, their shared logic is more significant. All of the methods are capable of generating large sets of computer-simulated district maps that satisfy specified criteria. These simulated maps can then be compared to an enacted plan to determine if that plan was likely designed pursuant to the same criteria or a different (and frowned-upon) factor. Suppose, for instance, that an enacted plan is highly skewed in a political party's favor and that we want to find out if this tilt is attributable to traditional districting requirements—contiguity, equal population, compactness, respect for county and municipality boundaries, and the like—or the pursuit of partisan advantage.[116] We could use any of the algorithms to produce many maps that heed these requirements but that ignore electoral data (and thus do not seek partisan gain). Next, we could calculate the partisan skews of both these maps and the enacted plan and compare the former with the latter. If the enacted plan is about as biased as most of the simulated maps, then its asymmetry probably cannot be blamed on deliberate gerrymandering. But if the enacted plan is more biased than most of the simulated maps, then partisan intent is the most plausible explanation for the divergence.

Our example of partisanship was not an accident. This is the factor on which almost all of the studies in this genre have focused. Over a sequence of articles, one of us has analyzed state-legislative plans across the country,[117] Florida's

113. *See, e.g.*, Bangia et al., *supra* note 112, at 17-18.

114. *See, e.g.*, Fifield et al., *supra* note 111, at 3.

115. For examples of articles applying optimization algorithms, see Cho & Liu, *supra* note 107, at 357-59; Roland G. Fryer, Jr. & Richard Holden, *Measuring the Compactness of Political Districting Plans*, 54 J.L. & ECON. 493, 503-06 (2011); and Liu, Cho & Wang, *supra* note 104, at 80-86. Optimization algorithms are well-suited to finding the "best" (or at least a "good") district map based on the parameters set by the programmer.

116. One of us has proposed a measure called the "efficiency gap" for capturing the partisan asymmetry of a district plan. *See* Nicholas O. Stephanopoulos & Eric M. McGhee, *Partisan Gerrymandering and the Efficiency Gap*, 82 U. CHI. L. REV. 831, 849-67 (2015). The discussion here, though, applies no matter how partisan asymmetry is assessed.

117. *See* Chen & Rodden, *supra* note 110, at 260-64.

congressional plan,[118] and congressional plans nationwide.[119] The results varied by jurisdiction: Florida's congressional plan, for example, was significantly more skewed in a Republican direction than the set of randomly generated maps.[120] Similarly, other academics have evaluated Maryland's,[121] Minnesota's,[122] North Carolina's,[123] and Pennsylvania's[124] congressional plans; Virginia's congressional and state-senate plans;[125] and Wisconsin's state-house plan.[126] These contributions have relied on MCMC algorithms of one kind or another.

In the courts as well, randomized redistricting has been deployed almost exclusively to address partisan issues. In a pair of cases, one of us submitted expert testimony in support of claims that the district plans for Wake County's Board of Commissioners[127] and Guilford's City Council[128] were malapportioned for the sake of partisan advantage. This testimony showed that when large numbers of maps with smaller population deviations were created, they were almost always less pro-Republican than the enacted plans.[129] One of us was also an expert in partisan-gerrymandering litigation involving Florida's congressional[130] and

118. *See* Chen & Rodden, *supra* note 13, at 335-42.

119. *See* Jowei Chen & David Cottrell, *Evaluating Partisan Gains from Congressional Gerrymandering: Using Computer Simulations to Estimate the Effect of Gerrymandering in the U.S. House*, 44 ELECTORAL STUD. 329, 334-39 (2016).

120. *See* Chen & Rodden, *supra* note 13, at 338-42.

121. *See* Cho & Liu, *supra* note 107, at 359-64.

122. *See* Liu et al., *supra* note 104, at 83-86.

123. *See* Bangia et al., *supra* note 112, at 3-12; Chin et al., *supra* note 112, at 1265-68; Liu et al., *supra* note 104, at 89-91.

124. *See* Chikina et al., *supra* note 112, at 2862-63; Fifield et al., *supra* note 111, at 10-13.

125. *See* Daryl DeFord & Moon Duchin, *Redistricting Reform in Virginia: Districting Criteria in Context*, 12 VA. POL'Y REV. 120 (2019).

126. *See* Maria Chikina, Alan Frieze & Wesley Pegden, *An Analysis of the Act 43 Wisconsin Assembly District Map Using the $\sqrt{\epsilon}$ Test*, ARXIV (Oct. 10, 2018), https://arxiv.org/pdf/1708.09852.pdf [https://perma.cc/4E6U-LS8Y]; Gregory Herschlag, Robert Ravier & Jonathan C. Mattingly, *Evaluating Partisan Gerrymandering in Wisconsin*, ARXIV (Sept. 5, 2017), https://arxiv.org/pdf/1709.01596.pdf [https://perma.cc/XFV7-MWFF].

127. *See* Raleigh Wake Citizens Ass'n v. Wake Cty. Bd. of Elections, 827 F.3d 333, 344 (4th Cir. 2016). This case also involved an analogous claim against Wake County's School Board. *See id.* at 338.

128. *See* City of Greensboro v. Guilford Cty. Bd. of Elections, 251 F. Supp. 3d 935, 943 (M.D.N.C. 2017).

129. *See Raleigh Wake Citizens Ass'n*, 827 F.3d at 344; *City of Greensboro*, 251 F. Supp. 3d at 943.

130. *See* League of Women Voters of Fla. v. Detzner, 172 So. 3d 363, 435-48 (Fla. 2015) (appendix).

state-senate plans,[131] Michigan's congressional and state-legislative plans,[132] North Carolina's congressional[133] and state-legislative plans,[134] Pennsylvania's congressional plan,[135] and Wisconsin's state-house plan.[136] In all of these cases, many maps were generated that matched or beat the enacted plan on its nonpartisan goals while ignoring electoral data. The fact that, in each suit, the simulated maps were less pro-Republican than the enacted plan bolstered inferences of partisan intent, partisan effect, and lack of justification for the enacted plan's bias.[137]

In contrast, our subject in this Article—the implications of switching from a proportional to a race-blind baseline in racial vote-dilution law—has not been explored in depth. A handful of mostly dated studies have compared the numbers of minority-controlled districts in enacted plans to the analogous numbers in sets of simulated maps.[138] But these studies have generally been limited to basic criteria like contiguity and population equality, to county-level building blocks, and to just one or two states.[139] These studies also have not considered

131. *See In re* Senate Joint Resolution of Legislative Apportionment 1176, 83 So. 3d 597, 653-83 (Fla. 2012).

132. *See* League of Women Voters of Mich. v. Benson, 373 F. Supp. 3d 867, 893-901 (E.D. Mich.), *vacated sub nom.* Chatfield v. League of Women Voters of Mich., 140 S. Ct. 429 (2019).

133. *See* Common Cause v. Rucho, 318 F. Supp. 3d 777, 874-76 (M.D.N.C. 2018), *rev'd*, 139 S. Ct. 2484 (2019); Harper v. Lewis, No. 19 CVS 012667, 2019 N.C. Super. LEXIS 122, at *12-14 (N.C. Super. Ct. Oct. 28, 2019).

134. *See* Common Cause v. Lewis, No. 18 CVS 014001, 2019 WL 4569584, at *17-28 (N.C. Super. Ct. Sept. 3, 2019).

135. *See* League of Women Voters v. Commonwealth, 178 A.3d 737, 770-75 (Pa. 2018).

136. *See* Chen *Whitford* Rpt., *supra* note 16, at 2-11.

137. *See League of Women Voters*, 373 F. Supp. 3d at 939-53; *Common Cause*, 318 F. Supp. 3d at 876, 882, 897; *League of Women Voters*, 178 A.3d at 818-21; *Common Cause*, 2019 WL 4569584, at *112-13, *115-18. Four Supreme Court Justices also recently endorsed this method, observing that the "extreme outlier approach" used by Chen and others effectively "demonstrate[s] the districting plan's [partisan] effects . . . ." Rucho v. Common Cause, 139 S. Ct. 2484, 2517-18 (2019) (Kagan, J., concurring).

138. *See* Cirincione et al., *supra* note 109, at 192-95 (examining South Carolina's 1990s congressional plan); Richard L. Engstrom & John K. Wildgen, *Pruning Thorns from the Thicket: An Empirical Test of the Existence of Racial Gerrymandering*, 2 LEGIS. STUD. Q. 465, 471-73 (1977) (examining New Orleans's 1970s city-council plan); Daniel B. Magleby & Daniel B. Mosesson, *A New Approach for Developing Neutral Redistricting Plans*, 26 POL. ANALYSIS 147, 159-63 (2018) (examining Mississippi's, Texas's, and Virginia's 2010s congressional plans); *cf.* DeFord et al., *supra* note 112, at 22-24 (comparing Black voting-age populations of districts in Virginia's 2010s state-house plan and in randomly generated maps).

139. *See* Cirincione et al., *supra* note 109, at 195-200 (failing to consider respect for municipality boundaries); Engstrom & Wildgen, *supra* note 138, at 469, 472 (considering only contiguity and population equality, and using arbitrary grid units as building blocks); Magleby & Mosesson, *supra* note 138, at 153 (considering only contiguity and population equality).

the partisan (as opposed to the racial) effects of a race-blind redistricting process. In the courts, likewise, only one race-related case has ever admitted expert testimony (by one of us) about randomized, computer-simulated redistricting.[140] This testimony indicated that a Wake County commissioners' district was likely drawn for a racial reason since it was more heavily African American than virtually any district in the simulated maps.[141] Accordingly, we are writing on a largely blank slate in this project. Our findings about the racial and partisan consequences of a race-blind baseline, across a wide range of states, are essentially the first of their kind.

B. Methodology

Before presenting these findings, we explain our methodology. We examine state-house plans rather than congressional plans for the simple reason that the former are comprised of many more districts. This larger volume of districts makes our study much more fine grained.[142] Consider Alabama (to which we return throughout the Article because it happens to be the first state alphabetically in our dataset). It has seven congressional districts, of which only one (the Seventh) is effectively controlled by African American voters.[143] If we were to simulate congressional maps for Alabama, then, their numbers of Black-controlled districts would likely fall within a narrow band: zero, one, or perhaps two. In contrast, Alabama has *105* state-house districts—fifteen times its quota

140. *See* Raleigh Wake Citizens Ass'n v. Wake Cty. Bd. of Elections, 166 F. Supp. 3d 553, 624 (E.D.N.C.), *aff'd in part, rev'd in part*, 827 F.3d 333 (4th Cir. 2016).

141. *See id.* In addition, one of us submitted expert testimony in a North Carolina *partisan*-gerrymandering case as to whether randomly generated maps ever include reasonably compact, majority-Black districts in different parts of the state. *See* Expert Report of Jowei Chen, Ph.D., Common Cause v. Lewis, No. 18 CVS 014001 (N.C. Super. Ct. Sept. 17, 2019) [hereinafter Chen *Common Cause* Rpt.].

142. As one of us put it in an earlier study of state-house plans, they "are not only understudied relative to Congress; they also provide far more empirical leverage . . . ." Stephanopoulos, *supra* note 24, at 1329. We use state-house plans in effect in 2016, the most recent date they were collected by the Census Bureau. *See, e.g.*, *TIGER/Line Shapefile, 2016, State, Illinois, Current State Legislative District (SLD) Upper Chamber State-Based*, U.S. CENSUS BUREAU (Sept. 6, 2019), https://www.catalog.data.gov/dataset/tiger-line-shapefile-2016-state-illinois-current-state-legislative-district-sld-upper-chamber-s [https://perma.cc/9T3S-AMHR].

143. *See Alabama's 7th Congressional District*, WIKIPEDIA (Sept. 2, 2020, 5:28 AM UTC), https://en.wikipedia.org/wiki/Alabama%27s_7th_congressional_district [https://perma.cc/FC3D-X4AS]; Kim Chandler, *Trial Begins in Challenge to Congressional District Map*, ASSOCIATED PRESS (Nov. 3, 2019), https://apnews.com/article/e6ce94f848a4470a9463eba7c22c31ee [https://perma.cc/74J5-NCPC].

of congressional seats – of which *27* are Black-controlled.[144] The range of Black-controlled districts that could be found in simulated state-house maps is thus far broader. And in fact, our simulations contain anywhere from 17 to 28 Black-controlled districts: as predicted, a wider array that enables a subtler analysis.

We cover nineteen of the twenty states with African American or Hispanic citizen voting-age population (CVAP) shares above 15% or combined African American and Hispanic CVAP shares above 20%.[145] These CVAP thresholds ensure that all of the states in our dataset have substantial minority populations that are capable of controlling numerous state-house districts. Put another way, these thresholds ensure that section 2 is genuinely in play – a redistricting requirement with real bite – in these states. As Table 1 below indicates, the nineteen states we consider span all four of the country's census regions: thirteen are in the South, four in the West, one in the Northeast, and one in the Midwest.[146] Further, the nineteen states' plans for their state houses were enacted by a variety of institutions: ten were passed by unified Republican governments, four by unified Democratic governments, two by redistricting commissions, two by courts, and one by a divided state government.[147] Our study is thus far more comprehensive than the few related articles that have appeared to date.[148]

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144. All data about state-house plans is on file with the authors. The data comes from a variety of sources, including the Census Bureau and the National Conference of State Legislatures. *See Cartographic Boundary Files – Shapefile*, U.S. CENSUS BUREAU, https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.html [https://perma.cc/8C3M-MGMV]; *Citizen Voting Age Population by Race and Ethnicity*, U.S. CENSUS BUREAU (Feb. 24, 2020), https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html [https://perma.cc/BJE7-SV6N] [hereinafter U.S. CENSUS BUREAU, *Citizen Voting Age Population*]; *2010 Redistricting Deviation Table*, NAT'L CONF. ST. LEGISLATURES (Jan. 15, 2020), http://www.ncsl.org/research/redistricting/2010-ncsl-redistricting-deviation-table.aspx [https://perma.cc/2QGT-C43K]. We also relied on a database of state-legislative election results maintained by Carl Klarner as well as our own prior work. *See* Chen & Rodden, *supra* note 13, at 335-38; Nicholas O. Stephanopoulos, *Arizona and Anti-Reform*, 2015 U. CHI. LEGAL F. 477, 497; Stephanopoulos, *supra* note 24, at 1341, 1367.

145. *See* U.S. CENSUS BUREAU, *Citizen Voting Age Population*, *supra* note 144. We do not consider other minority groups (like Asian Americans or Native Americans) because they are much smaller in population than African Americans and Hispanics. *See id.* We do not consider New Jersey due to unreliable ecological-inference estimates that prevent us from assessing accurately which districts are and are not minority opportunity districts.

146. *See Census Regions and Divisions of the United States*, U.S. CENSUS BUREAU, https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf [https://perma.cc/ZUL8-DJMG].

147. *See* Stephanopoulos, *supra* note 144, at 497.

148. *See supra* notes 138-139 and accompanying text.

TABLE 1.
STATES INCLUDED IN ANALYSIS

State	Black CVAP	Hispanic CVAP	Region	Authority
Alabama	26.0%	1.7%	South	Republican
Arizona	4.1%	21.5%	West	Commission
Arkansas	15.1%	3.0%	South	Democratic
California	6.7%	28.0%	West	Commission
Delaware	20.6%	5.1%	South	Democratic
Florida	14.4%	18.2%	South	Republican
Georgia	31.3%	4.1%	South	Republican
Illinois	14.7%	10.2%	Midwest	Democratic
Louisiana	31.2%	2.9%	South	Republican
Maryland	29.6%	4.5%	South	Democratic
Mississippi	36.2%	1.5%	South	Republican
Nevada	8.8%	17.4%	West	Court
New Mexico	1.9%	40.9%	West	Court
New York	14.2%	13.8%	Northeast	Divided
North Carolina	21.7%	3.5%	South	Republican
South Carolina	27.0%	2.4%	South	Republican
Tennessee	16.2%	2.1%	South	Republican
Texas	13.0%	28.3%	South	Republican
Virginia	19.4%	4.8%	South	Republican

For each state in our dataset, we randomly generate one thousand computer-simulated state-house maps using a modified version of a MCMC redistricting algorithm that one of us has previously employed in expert testimony.[149] The

149. Under this related approach, a recombination MCMC algorithm developed by one of us was used to create a *single* map that satisfied the specified parameters. This process was repeated hundreds or thousands of times to generate a large number of maps. In other words, the maps were the endpoints of hundreds or thousands of separate Markov chains, not waypoints along a single, very long Markov chain. *See, e.g.*, Chen *Common Cause* Rpt., *supra* note 141, at 2-6; Chen *Whitford* Rpt., *supra* note 16, at 6-7.

In their response to this Article, Moon Duchin and Douglas Spencer make the bewildering claim that this earlier approach "incorporated Flip chains" into its redistricting algorithm. Moon Duchin & Douglas M. Spencer, *Models, Race, and the Law*, 130 YALE. L.J.F. 744, 770 n.90

algorithm ignores racial and partisan data.[150] (For now. In Part IV, we instruct it to *match* the existing number of minority-controlled districts in each state.)[151] The algorithm also equals or improves on each enacted plan's performance in terms of population equality, compactness, county splits,[152] and municipality

(2021). It did not. To be perfectly clear, the algorithm combined and then repartitioned adjacent districts—much like the method later presented by DeFord et al., *supra* note 112.

More generally, a word is in order about the tone of the response. It often reads like a carping report by an opposing expert in a lawsuit. This disparaging style is jarring given the small-bore nature of the authors' criticisms, as well as their own substantive findings. The authors' principal grievances are that: (1) we focus on the median rather than the overall range of distributions, *see* Duchin & Spencer, *supra*, at 757-67; (2) we tweak their preferred redistricting algorithm to ensure that all simulated maps at least match the performance of the enacted plan in certain respects, *see id.* at 772; (3) we do not consider possible alternatives to our reasonable definition of minority opportunity districts, *see id.* at 776-81; and (4) we do not consider possible alternatives to our reasonable implementation of ecological inference, *see id.* We further address these complaints below. Right or wrong, though, the objections strike us as quite minor, in no way warranting the authors' hostile rhetoric.

That tone is doubly misplaced based on the authors' own results. They show that, in the same states we examine, the median volume of Black-majority districts is almost always lower in sets of race-blind simulations than in enacted plans. *See id.* at 763-67. That is also our central finding (only with respect to opportunity districts, not majority-minority districts) in Part III, *infra*. The authors further demonstrate that, no matter how ecological inference is conducted, the enacted Texas state-house plan has more opportunity districts than almost all simulated race-blind maps. *See id.* at 779. Again, this is a *confirmation* of our key finding below—and so hardly a basis for hyperbolic criticism.

150. The algorithm ignores partisan data both because extreme partisan gerrymandering is itself unconstitutional (albeit nonjusticiable), *see* Rucho v. Common Cause, 139 S. Ct. 2484, 2506-07 (2019); *id.* at 2514-15 (Kagan, J., dissenting), and because no state includes partisan advantage as one of its formal redistricting criteria, *see Redistricting Law 2010*, *supra* note 106, at 173-217. Accordingly, there is no acknowledged level of partisan advantage for the algorithm to match, and even if there were, intentionally matching it might be unlawful.

151. *See infra* Part IV.

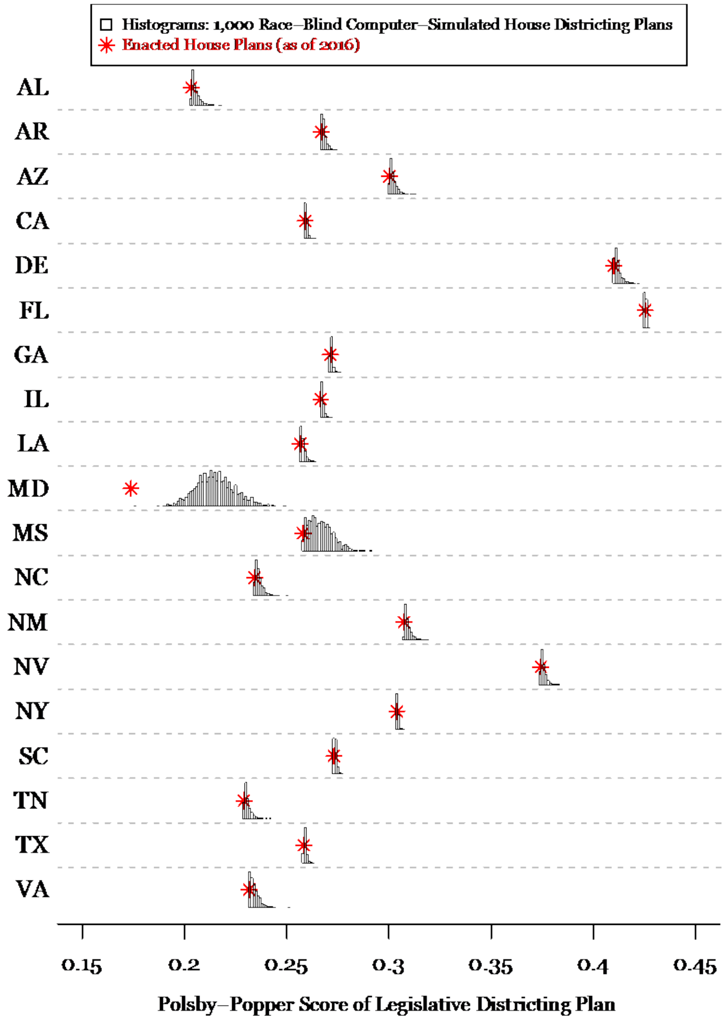
152. Duchin and Spencer omit respect for county boundaries as a parameter both when they generate two million maps for each of twenty states, *see* Duchin & Spencer, *supra* note 149, at 763-67, and when they do so for the Texas State House, *see id.* at 777-81. However, respect for county boundaries is not only a traditional redistricting criterion; it is also required by law in many of these states, including Texas. *See* TEX. CONST. art. III, § 26. This parameter's omission thus often results in the creation of simulated maps that are not plausibly lawful. Its omission also renders ironic Duchin and Spencer's criticism that *we* have failed to incorporate the "statutory and constitutional rules for redistricting." Duchin & Spencer, *supra* note 149, at 747.

Later, when Duchin and Spencer do consider county lines in their appendix, they do not discuss the volumes of minority opportunity districts in their various ensembles. *See id.* at 790-92. Their alternative implementations of the county-respect criterion are also untethered to the performance of the enacted plan. That is, they provide no guarantee that the simulated maps follow county boundaries at least as well as the enacted plan. *See id.* Relatedly, the reason splits. To illustrate, the red stars in Figure 1 below represent the average compactness of the districts in each enacted plan. The histograms show the distributions of the thousand simulated maps' average district compactness for each state. As is readily apparent, the simulated districts are never more noncompact than the enacted districts, on net, and generally feature very similar mean-compactness scores.

why these alternative approaches redraw more of Texas, *see id.* at 792-94, is simply their lack of a connection to the enacted plan. In large swathes of rural Texas, the enacted plan already splits as few counties as possible. Lastly, Duchin and Spencer's claim that our version of the county-respect criterion "skews the sampling distribution," *id.* at 786, is belied by their own analysis. With respect to partisanship, our version of the criterion yields distributions very similar to those produced by their alternative approaches. *See id.* at 791.

FIGURE 1.

AVERAGE POLSBY-POPPER COMPACTNESS OF ACTUAL AND SIMULATED STATE-HOUSE PLANS



More specifically, to implement the parameters we selected, the algorithm relies on the "Recombination" MCMC method, as described by Daryl DeFord, Moon Duchin, and Justin Solomon.[153] The algorithm starts with a randomly

153. *See* DeFord et al., *supra* note 112, at 11-22. Duchin and Spencer object that we do not report convergence metrics for our algorithm. *See* Duchin & Spencer, *supra* note 149, at 746, 775. They overlook our evidence below that each saved map is unrelated to the prior saved map in the chain. *See infra* Figure 2. They also fail to present any such evidence for their own

drawn seed map[154] that satisfies all of the required threshold criteria: a total population deviation no larger than that of the enacted plan, an average Polsby-Popper compactness score that at least matches the enacted plan's, and at least as many counties and municipalities preserved whole as the enacted plan. The algorithm then proposes a long series of random, iterative changes to this map. Each of these sequential changes is accepted as long as it does not cause the map to score worse than the enacted plan on any dimension (population equality, compactness, and preserved counties and municipalities). For instance, an iterative change that worsens the average compactness of the simulated map's districts may be accepted, provided it does not worsen the map to such a degree that its districts' average compactness is inferior to that of the enacted plan's districts.[155]

In each MCMC iteration, the algorithm randomly selects two adjacent districts in the map. The populations of these two districts are then merged, and a new, random repartitioning of the two districts is proposed.[156] This new proposed repartitioning is accepted as long as it would not cause a violation of any of the required thresholds for population equality, compactness, and preserved counties and municipalities. Overall, we find that across the states we analyze,

simulations. Duchin and Spencer further complain that we include only one thousand maps in each simulation set. *See* Duchin & Spencer, *supra* note 149, at 776, 786. Our substantive conclusions would not have changed, however, even if we had kept all ten million iterations for each state. *See infra* note 158 (finding that even *one hundred* simulated maps have essentially the same properties as our simulation sets). Duchin and Spencer dislike the "rejection filters" we use as well, which ensure that all of our simulated maps perform at least as well as the enacted plan in certain respects. *See* Duchin & Spencer, *supra* note 149, at 747, 785. But such filters are ubiquitous in redistricting litigation. Without them, it is impossible to guarantee that the enacted plan's performance has been matched or exceeded. It is impossible, that is, to execute this Article's project of analyzing race-blind redistricting *while holding other parameters constant*.

154. The algorithm generates this seed map by designing a random map that may or may not satisfy the various threshold parameters and then making a series of iterative adjustments until the map is confirmed to satisfy all of these criteria.

155. The only minor exceptions to this procedure are California and Illinois. California is the only state for which the algorithm is unable to match one of the threshold criteria: specifically, the number of preserved municipalities. Instead, the algorithm uses as a threshold 98% of the actual number of preserved municipalities (or 1260). *Cf.* Vladimir Kogan & Eric McGhee, *Redistricting California: An Evaluation of the Citizens Commission Final Plans*, 4 CAL. J. POL. & POL'Y 1, 11-13 (2012) (discussing the excellent performance of the California redistricting commission with respect to political-subdivision splits). For Illinois, additionally, the algorithm *could* match the enacted plan's near-perfect population equality, but doing so would dramatically shrink the universe of maps explored by the algorithm. Accordingly, the algorithm instead uses a (still very tight) 2% total population-deviation threshold.

156. This step is the unique feature of "Recombination" (or ReCom) Markov chains, which randomly merge and repartition adjacent districts at each step. *See* DeFord et al., *supra* note 112, at 11-13.

the acceptance rate for these iteratively proposed changes is roughly 35%. In other words, about 35 proposals are accepted per 100 iterations.

In total, the algorithm performs over ten million iterations for each state. First, the algorithm begins with an initial "burn-in" period of 100,000 iterations, during which no simulated map is saved. The purpose of performing, and not saving, these initial burn-in iterations is to ensure that none of the subsequently saved maps are dependent on the initial seed map. After this initial burn-in period, the algorithm performs an additional ten million iterations, during which a simulated map is outputted and saved after each 10,000th iteration. Thus, the algorithm produces a total of 1,000 different simulated maps via the following steps:

(1) Begin with a random seed map.
(2) Perform an initial series of 100,000 burn-in iterations. Each iteration involves a proposed redrawing of two adjacent, randomly selected districts.
(3) Perform a series of 10,000 iterations. Each iteration involves a proposed redrawing of two adjacent, randomly selected districts.
(4) Save the current map as simulated map #1. Repeat steps 3 and 4 until a total of 1,000 simulated maps have been saved.

Because the algorithm creates a single chain of maps with a long series of random changes between each map, certain beneficial mathematical properties follow. First, the 1,000 saved maps are representative of the universe of maps that match or beat the enacted plan in terms of population equality, compactness, and preserved counties and municipalities.[157] The characteristics of the saved maps thus are not arbitrary; to the contrary, they are approximately the features that the entire universe of relevant maps would also exhibit, if those innumerable maps could somehow be compiled.

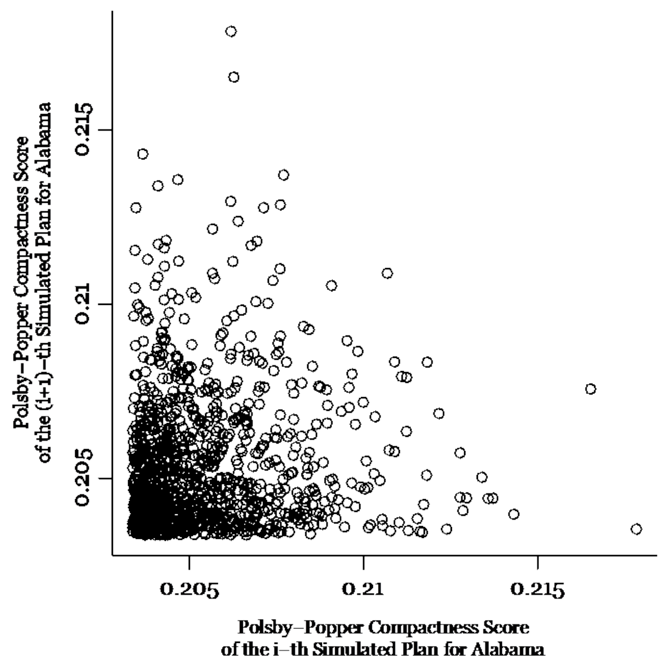
Second, each random map saved by the algorithm is uncorrelated with the next saved map. In other words, the fifth map saved by the algorithm is not more similar to the fourth map than it is to the third map, in expectation. As an example, Figure 2 verifies this property for the 1,000 maps that the algorithm produced for Alabama. In the chart, each of the 999 circles represents a pair of successive simulated maps (e.g., the fourth and the fifth maps). The horizontal axis measures the average Polsby-Popper compactness score of the prior map (e.g., the fourth map) generated by the algorithm, and the vertical axis measures the compactness of the next map (e.g., the fifth map). Overall, the correlation is 0.04, indicating that there is virtually no statistical relationship between each

157. *See, e.g.*, Bangia et al., *supra* note 112, at 27 (discussing the representativeness of map ensembles produced through MCMC algorithms); Fifield et al., *supra* note 111, at 3 (same).

simulated map and the subsequent map yielded by the algorithm with respect to compactness. In fact, we find a similar lack of correlation between successive simulated maps for all of the states we analyze. For the same reason, the maps produced by the algorithm do not depend on the initial seed map used at the outset. Hence, instead of using a random seed map, one could use the state's enacted plan, or any other valid district plan, without substantially affecting the results.[158]

FIGURE 2.

AVERAGE POLSBY-POPPER COMPACTNESS OF SUCCESSIVE SIMULATED ALABAMA STATE-HOUSE MAPS

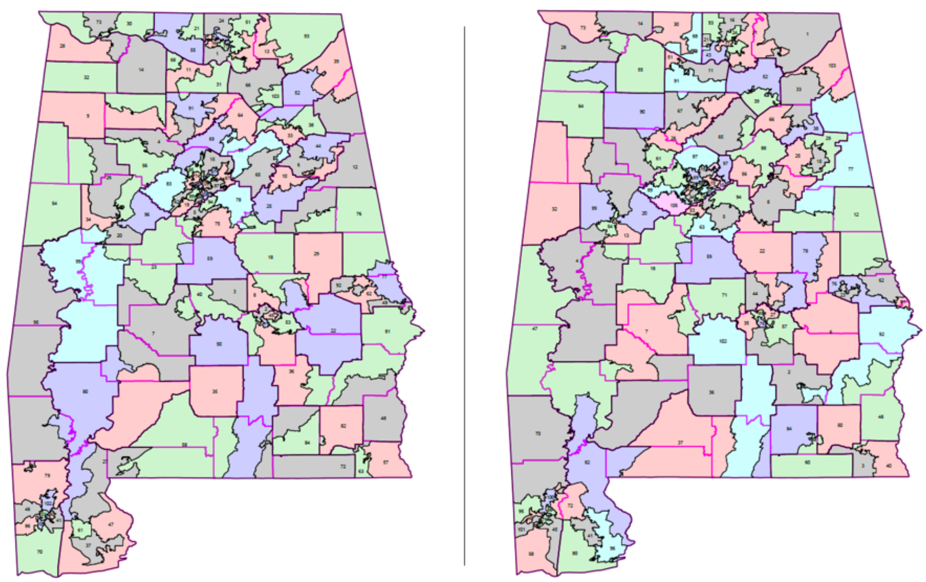


158. As further evidence that our results are robust to different methodologies, Appendix D includes a series of scatter plots of the findings we report here versus the outcomes of another algorithmic approach. Under that other approach, 100 (rather than 1,000) simulated maps are produced, and each map is the endpoint of a different Markov chain (not a waypoint along a single Markov chain). *See supra* note 149. The other approach continues to rely on the ReCom MCMC method and the same redistricting parameters that we use here. As the scatter plots indicate, the correlations between the two approaches are extremely high: above 0.99 in each case. In terms of the minority opportunity and Republican districts created by the algorithms, then, it makes essentially no difference which of these approaches is employed. This conclusion helps to rebut Duchin and Spencer's claim that our results are highly sensitive to our particular methodological choices. *See* Duchin & Spencer, *supra* note 149, at 773-81. It similarly refutes their assertion that our algorithm exhibits "strong dependence on the initial starting point for a chain." *Id.* at 786. Under the alternative approach, each chain begins with a *different* seed map, yet our conclusions are virtually identical.

For depictions of the algorithm's outputs, see the two maps below. They are the first two of the thousand Alabama state-house maps that the algorithm yielded. They are plainly distinct from each other (as even a casual glance at their district lines reveals).[159] They have equivalent population deviations to the enacted plan (2.0%). On average, their districts are slightly more compact (using the Polsby-Popper metric) than the enacted plan's districts (0.204 and 0.206 versus 0.203). They divide about half-a-dozen fewer counties than the enacted plan (43 and 44 versus 50). And they split as many, or somewhat fewer, municipalities than the enacted plan too (168 and 160 versus 168). The same is true, of course, for the 998 other Alabama state-house maps that we do not display.

FIGURE 3.

SAMPLE ALABAMA STATE-HOUSE DISTRICT MAPS



After creating a thousand state-house maps for each state in our dataset *without* considering race, we then *do* take race into account to calculate the numbers of minority-controlled districts in both the simulated maps and the enacted plans. Henceforth, we call these districts "minority opportunity districts," or "opportunity districts" for short. This term is synonymous with "minority-controlled districts," as minority voters who control districts' elections necessarily have the opportunity to elect their preferred candidates in these elections.

159. When groups of districts are the same (or nearly so) in the two maps, it is because any alternative configuration in the area would violate one of the algorithm's parameters (typically the preservation of county and municipality boundaries).

"Minority opportunity districts," though, is more consistent with the language of section 2, which imposes liability when minority "members have less *opportunity* . . . to elect representatives of their choice."[160]

To determine which districts qualify as opportunity districts, we do not use a 50% minority population-share cutoff. That is what most prior studies have done,[161] but the Supreme Court recently warned jurisdictions not to assume that section 2 requires them to draw majority-minority districts. As the Court put it, the "idea" that section 2 "cannot be satisfied by crossover districts"—in which minority voters make up less than half the population, but may still elect their preferred candidates thanks to crossover support from white voters[162]—"is at war with [the Court's] § 2 jurisprudence."[163] Instead, we use a technique known as ecological inference,[164] on a more extensive basis than any prior study,[165] to estimate minority and nonminority citizens' voting behavior. In this context, ecological inference leverages information about precincts' election results and demographic compositions to predict whether and how members of different

160. 52 U.S.C. § 10301(b) (2018) (emphasis added); *see, e.g.*, League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399, 428-32, 435-39, 441-42 (2006) (referring repeatedly to opportunity districts).

161. *See, e.g.*, Cirincione et al., *supra* note 109, at 201 (estimating "the probability that a map-drawing process blind to race will result in a plan . . . with at least one majority [B]lack district"); Magleby & Mosesson, *supra* note 138, at 159 (considering "majority-minority districts . . . in which the US Census data categorizes 50% or more of the residents as 'Black or African American alone'").

162. *See* Bartlett v. Strickland, 556 U.S. 1, 13 (2009) (defining crossover districts).

163. Cooper v. Harris, 137 S. Ct. 1455, 1472 (2017) (emphasis omitted); *see also Bartlett*, 556 U.S. at 24 ("States can—and in proper cases should—defend against alleged § 2 violations by pointing to crossover voting patterns and to effective crossover districts."). The Court has similarly warned jurisdictions not to use a 55% minority population-share cutoff for opportunity districts in *Bethune-Hill v. Virginia State Board of Elections*, 137 S. Ct. 788, 799 (2017), and not to *freeze* opportunity districts' minority population shares from the previous decade in *Alabama Legislative Black Caucus v. Alabama*, 575 U.S. 254, 275-79 (2015).

164. *See, e.g.*, GARY KING, A SOLUTION TO THE ECOLOGICAL INFERENCE PROBLEM: RECONSTRUCTING INDIVIDUAL BEHAVIOR FROM AGGREGATE DATA 7-27 (1997) (introducing the ecological-inference method); ECOLOGICAL INFERENCE: NEW METHODOLOGICAL STRATEGIES (Gary King, Ori Rosen & Martin A. Tanner eds., 2004) (further refining the technique). Ecological inference is essentially an updated and generalized version of the ecological-regression method that the Supreme Court endorsed in *Gingles*. *See* Thornburg v. Gingles, 478 U.S. 30, 53 n.20 (1986) (noting that the method is "standard in the literature for the analysis of racially polarized voting"). Some kind of analysis is necessary to estimate minority and nonminority citizens' voting behavior, of course, because thanks to the secret ballot, raw election results do not reveal voters' race.

165. The only prior study that comes close is Brian Amos & Michael P. McDonald, Racially Polarized Voting and Roll Call Behavior in the U.S. House (Apr. 14, 2015) (unpublished manuscript) (on file with author), which also applied ecological inference on a multistate basis but used a single model rather than hundreds of county-specific models.

racial groups voted.[166] We run separate precinct-level models for each county within each state we consider. We also run separate models for voter turnout and voter partisan preference. In combination, these models yield distinct estimates of African American, Hispanic, and white votes for Democrats and Republicans in each precinct, while allowing voter behavior to vary from one county to another.[167]

For instance, the two maps below show our models' predictions for Black and white voters' partisan preferences in Alabama. The bluer (redder) a precinct is colored, the more its voters of a specified race favor Democrats (Republicans).

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166. *See, e.g.*, Gary King, Ori Rosen & Martin A. Tanner, *Information in Ecological Inference: An Introduction*, *in* ECOLOGICAL INFERENCE, *supra* note 164, at 1-2 (discussing ecological inference in the context of estimating racial groups' voting behavior).

167. More specifically, we use results from the 2012 presidential election (the most recent race for which precinct-level data is universally available) as our dependent variable in each model. The 2012 presidential election featured a candidate who was clearly minority-preferred—Barack Obama—making it an excellent choice for estimating minority voters' and white voters' support for a minority candidate of choice. As our key independent variables in each model, we use data about precincts' racial compositions from the 2010 Census. Each model is a hierarchical multinomial-Dirichlet model for ecological inference in $R \times C$ tables, as developed in Ori Rosen, Wenxin Jiang, Gary King & Martin A. Tanner, *Bayesian and Frequentist Inference for Ecological Inference: The* R × C *Case*, 55 STATISTICA NEERLANDICA 134 (2001), and implemented using the eiPack (version 0.1-7) in R.

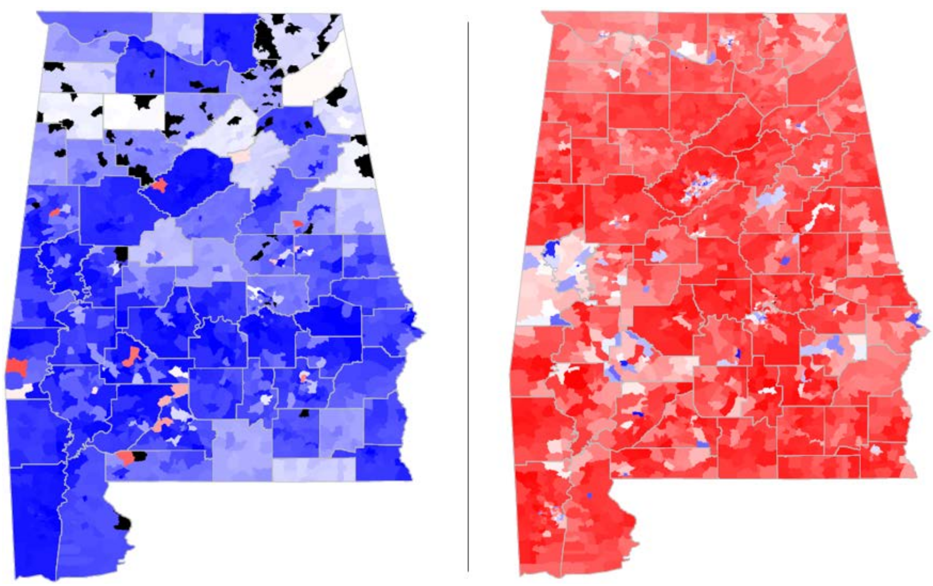
Duchin and Spencer point out that ecological inference is a stochastic (or probabilistic) technique, meaning that different runs of the method may yield slightly different conclusions about the volumes of opportunity districts. *See* Duchin & Spencer, *supra* note 149, at 777-79. While this is true enough, it has little bearing on our *comparisons* of enacted plans with ensembles of simulated maps. Any idiosyncrasies in our particular ecological-inference run are reflected in the numbers of opportunity districts we report for *both* the enacted plans and the simulated maps. Any idiosyncrasies, that is, are incorporated into what are true apples-to-apples comparisons. Moreover, our reliance on point estimates generated from a specific ecological-inference run is consistent with the bulk of VRA litigation and scholarship. *See, e.g.*, League of United Latin Am. Citizens v. Perry (*LULAC*), 548 U.S. 399, 427 (2006) (discussing point estimates of racial groups' voting behavior, derived from ecological inference, without citing any uncertainty or confidence intervals); Amos & McDonald, *supra* note 165, at 8-10, 19 (same).

Duchin and Spencer also object that we run a separate ecological inference model for each county (as opposed to a single model for each state). *See* Duchin & Spencer, *supra* note 149, at 777-78. But this is a feature, not a bug. It is customary in VRA litigation to perform ecological inference at the substate level and thus to avoid assumptions about how racial voting patterns in different parts of a state are related to one another. *See, e.g.*, D. James Greiner, *Ecological Inference in Voting Rights Act Disputes: Where Are We Now, and Where Do We Want to Be?*, 47 JURIMETRICS 115, 142-43 (2007) (performing ecological inference for a single congressional district). Duchin and Spencer further complain that our method uses two stages (one for turnout and another for partisan preference), rather than one. *See* Duchin & Spencer, *supra* note 149, at 778. Again, though, it is our approach that is standard and theirs that is less common. *See, e.g.*, Greiner, *supra*, at 142 (running "King's EI twice . . . once to estimate [B]lack turnout, the second time to estimate Democratic vote share among [B]lack voters").

The few areas shaded in black have too few voters to produce reliable estimates. It is obvious from the map on the left that Alabama's Black voters overwhelmingly prefer Democrats. This pattern has some interesting exceptions, though, like the somewhat lower Black support for Democrats in northern and southwestern Alabama (outside the state's traditional Black Belt). It is equally clear from the map on the right that Alabama's white voters favor Republicans by huge margins. However, this overall preference comes with a more substantial caveat, namely, the moderate or even Democratic-leaning inclinations of suburban white voters near Birmingham, Huntsville, and Montgomery.

FIGURE 4.

PARTISAN PREFERENCES OF BLACK (LEFT MAP) AND WHITE VOTERS (RIGHT MAP) IN ALABAMA



Armed with this data, we define an opportunity district as one where (1) the minority-preferred candidate wins the general election,[168] and (2) minority

168. We thus omit primary elections from our analysis, while acknowledging their usefulness in assessing racial polarization in voting. We have no choice but to omit them—along with all other state-specific races—because they involve different candidates from one jurisdiction to the next. This methodological decision is criticized by Duchin & Spencer, *supra* note 149, at 773-81. However, as these authors implicitly concede by only considering a single state (Texas), it is simply impossible to estimate voter behavior across *multiple* states using *state-specific* election results. Only presidential elections feature the *same* candidates competing in all states. That is why other studies that, like ours, analyze racial polarization in voting voters who support the minority-preferred candidate outnumber white voters backing that candidate, provided that (3) minority voters of different racial groups are aggregated only if each group favors the same candidate.[169] Consider a district with one hundred total voters, of whom forty are minority voters. Thanks to the first condition, the district may qualify as an opportunity district only if the candidate of choice of the forty minority voters (whether she is a Democrat or a Republican) is elected. Next, focus on the number of *white* voters who support the same candidate who is preferred by the forty minority voters. Assume, also, that thirty-five of the forty minority voters actually back that candidate. Then, thanks to the second condition, the district may count as an opportunity district only if fewer than thirty-five white voters pull the lever for that candidate.

Lastly, zoom in on the thirty-five minority supporters of that candidate. If there are enough of them from a single racial group to outnumber the white backers of that candidate, then the district is an opportunity district. The district is also an opportunity district if no single racial group's supporters of that candidate outnumber white supporters, but multiple racial groups (whose combined backers of that candidate do outnumber white backers) jointly favor that candidate. Suppose, however, that thirty white voters support that candidate, that of the thirty-five minority backers of that candidate twenty are African Americans and fifteen are Hispanics, and that Black voters and Hispanic voters in the district prefer *different* candidates, on net. Then thanks to the third condition, the district is *not* an opportunity district due to the lack of minority-voter cohesion.

While this definition may seem complex, something close to it is arguably compelled by section 2 precedent. According to recent Supreme Court cases, opportunity-district status cannot be determined based on "an announced racial target" like a 50% minority population share.[170] Indeed, use of such a target

nationwide also rely on presidential-election results. *See, e.g.*, Stephen Ansolabehere, Nathaniel Persily & Charles Stewart III, *Race, Region, and Vote Choice in the 2008 Election: Implications for the Future of the Voting Rights Act*, 123 HARV. L. REV. 1385, 1400-13 (2010); Amos & McDonald, *supra* note 165, at 4-5.

169. Duchin and Spencer drop the second and third of these requirements in their analysis of opportunity districts using a broader set of elections, asking only whether a minority-preferred candidate prevails. *See* Duchin & Spencer, *supra* note 149, at 781. But without the second condition, one cannot be certain that a candidate actually *is* preferred by minority voters; she might be the first choice of white voters, grudgingly accepted by minority voters. And without the third condition, different groups of minority voters (like Black and Hispanic voters) might be combined even if their political preferences diverge.

170. *See* Cooper v. Harris, 137 S. Ct. 1455, 1469 (2017); *see also* Bethune-Hill v. Va. State Bd. of Elections, 137 S. Ct. 788, 799 (2017) (finding a "55% [Black voting-age population] target" to renders a district a presumptively unconstitutional racial gerrymander.[171] Instead, the core of the inquiry must be whether "the minority group" *in fact* "has the potential to elect a representative of its own choice," taking into account minority and nonminority voting preferences and turnout.[172] These are exactly the factors that our definition incorporates. An older Supreme Court decision also makes clear that when "an agglomerated political bloc" that "combine[s] distinct ethnic and language minority groups" is at issue, "proof of minority political cohesion is all the more essential."[173] Our definition's third prong takes this holding to heart, recognizing so-called "coalition districts" only when multiple minority groups favor the same candidate.

Table 2, then, lists the current numbers of opportunity districts, at the state-house level, for all nineteen states in our dataset. Because of their relatively low volume, we do not distinguish coalition districts from other kinds of opportunity districts. Black (Hispanic) opportunity districts are therefore those where Black (Hispanic) voters are able to elect their preferred candidates—either alone, if they are numerous enough, or in conjunction with Hispanic (Black) voters, if the groups are mutually cohesive.[174] As noted earlier, we do not consider other racial or ethnic minorities since their populations are so small that they control very few opportunity districts.[175] Even for the groups we do cover, Table 2 tallies opportunity districts only in cases where Blacks or Hispanics individually make up more than 10% of a state's CVAP. Again, smaller minority populations are less relevant for section 2 purposes since they are rarely capable of controlling

be "evidence that race predominated"); Ala. Legislative Black Caucus v. Alabama, 575 U.S. 254, 275 (2015) (explaining that the VRA does not require opportunity districts "to maintain a particular numerical minority percentage").

171. *See Ala. Legislative Black Caucus*, 575 U.S. at 277.

172. *Cooper*, 137 S. Ct. at 1470 (quoting Growe v. Emison, 507 U.S. 25, 40 (1993)) (alterations omitted); *see also* Thornburg v. Gingles, 478 U.S. 30, 66 (1986) (emphasizing that section 2 requires "a practical evaluation of reality" and "a functional analysis of vote dilution"). That said, unlike the rest of the doctrinal framework, the *first Gingles* prong does insist that it be possible to draw an additional majority-minority district. *See* Bartlett v. Strickland, 556 U.S. 1, 2 (2009).

173. *Growe*, 507 U.S. at 41. While the Supreme Court has not addressed whether minority-group coalitions may bring section 2 claims, in the lower courts, the provision has been "interpreted to apply to coalition districts (at least when the combined size of the minority groups is greater than 50 percent)." Nicholas O. Stephanopoulos, *The South After* Shelby County, 2013 SUP. CT. REV. 55, 82.

174. For labeling purposes, we assign coalition districts to the larger minority group.

175. *See* U.S. CENSUS BUREAU, *Citizen Voting Age Population*, *supra* note 144.

opportunity districts. This is the status quo of minority representation, to which we compare the simulated maps in the next Part.[176]

TABLE 2.
CURRENT NUMBERS OF MINORITY OPPORTUNITY DISTRICTS

State	State-House Districts	Current Black Opportunity Districts	Current Hispanic Opportunity Districts
Alabama	105	27 (25.7%)	
Arizona[177]	30		1 (3.3%)
Arkansas	100	13 (13.0%)	
California	80		15 (18.8%)
Delaware	41	4 (9.8%)	
Florida	120	16 (13.3%)	7 (5.8%)
Georgia	180	52 (28.9%)	
Illinois	118	21 (17.8%)	5 (4.2%)
Louisiana	105	30 (28.6%)	
Maryland[178]	47	15 (31.9%)	
Mississippi	122	42 (34.4%)	
Nevada	42		0 (0.0%)
New Mexico	70		16 (22.9%)
New York	150	34 (22.7%)	3 (2.0%)
North Carolina	120	26 (21.7%)	
South Carolina	124	39 (31.5%)	
Tennessee	99	14 (14.1%)	
Texas	150	18 (12.0%)	28 (18.7%)
Virginia	100	13 (13.0%)	

176. In making these comparisons, we should be clear that we are not affirmatively prescribing how many opportunity districts states *should* draw. Rather, we are contrasting how many opportunity districts states *did* draw with the numbers they *likely would have drawn* had they considered only traditional, nonpartisan, nonracial criteria. Our focus on opportunity districts rather than on Democratic or Republican districts is thus new, but the logic of our approach is the same as that of the earlier partisan work. *See supra* notes 117-137 and accompanying text.

177. Because Arizona has multimember state-house districts, we analyze its single-member state-senate districts instead.

178. Because some of Maryland's state-house districts are multimember, we consider its single-member state-senate districts instead.

III. THE NEW WORLD OF MINORITY REPRESENTATION

In making these comparisons, we begin with a handful of illustrative cases. They show that enacted state-house plans vary in interesting ways from the sets of simulated maps in how they represent minority voters. We then broaden our analysis to all of the states in our dataset. The most important takeaway is that most (though not all) enacted plans contain more minority opportunity districts than would typically emerge from a nonracial redistricting process. Lastly, we consider the legal and policy implications of our findings. If courts adopted the race-blind baseline,[179] some states would be free to dismantle substantial numbers of opportunity districts: maybe even all such districts in excess of that threshold. Other states, however, would remain vulnerable to section 2 challenges because they have not constructed as many opportunity districts as would usually arise if the lines were drawn using nonracial criteria.

A. Illustrative Cases

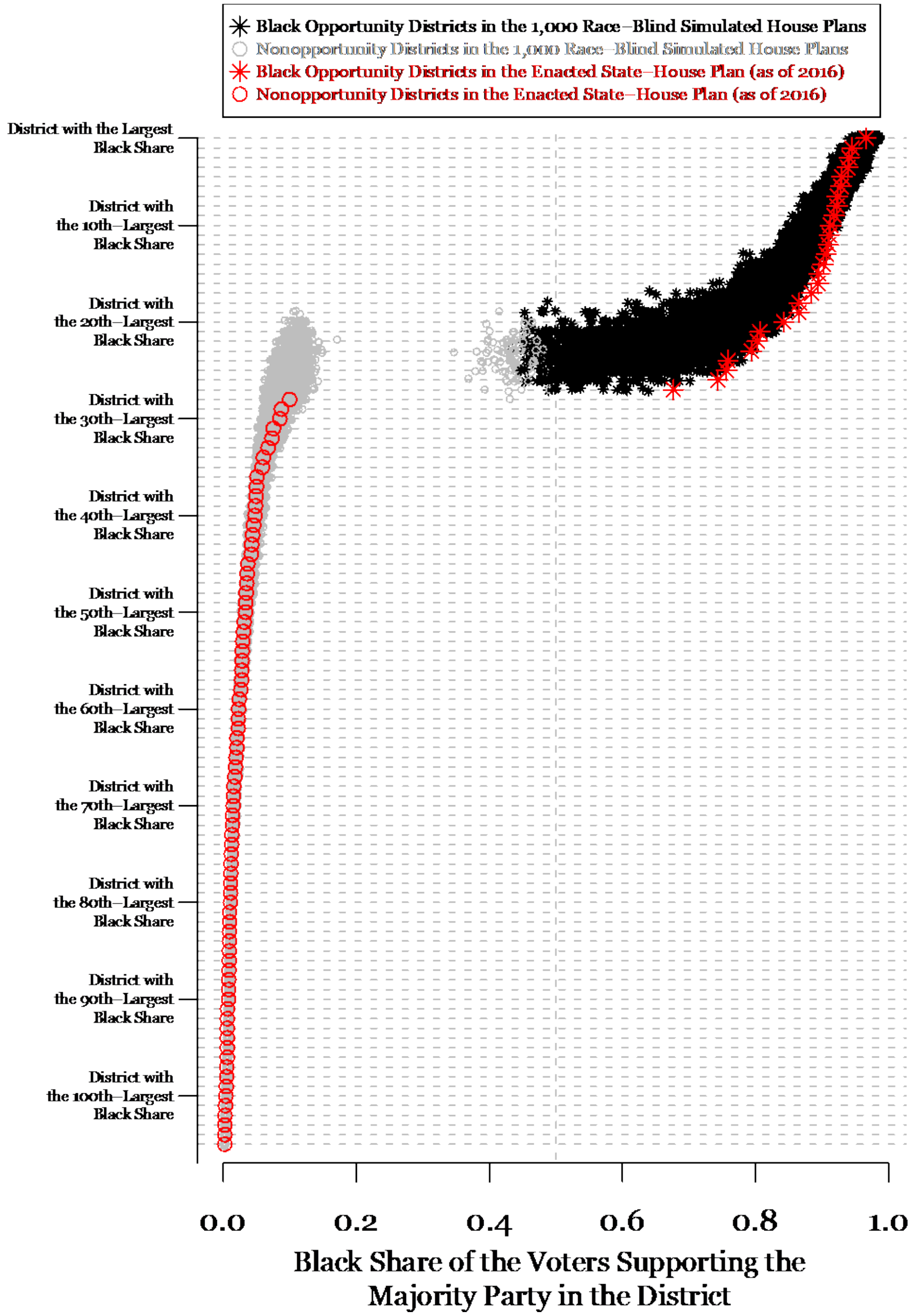
We return to Alabama, which is not just the first state in our dataset but also an exemplar of the dataset's largest subcategory, as a southern state formerly covered by section 5 of the VRA with a large African American population and a state-house plan enacted by a unified Republican government.[180] Figure 5 displays Alabama's actual districts (the red markers) and the districts in the simulated maps (the gray markers), sorted by the share of voters backing the district's prevailing party who are Black. A value near 100% thus means that almost all Democratic voters are Black and the district overall is Democratic; similarly, a score close to 0% means that virtually no Republican voters are Black and the district overall is Republican.[181] Markers that are stars represent Black opportunity districts (enacted or simulated), while circular markers denote all other districts

179. We note that the race-blind baseline we use here is not the only reasonable version of such a benchmark. Other plausible methodological choices, such as different line-drawing parameters or the inclusion of different elections in the ecological-inference analysis, could yield different numbers of opportunity districts in the absence of any consideration of race. Accordingly, our references to "the race-blind baseline" are really shorthands for "a reasonable race-blind baseline."

180. In our dataset, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas are also members of this category (though Florida and North Carolina were only partly covered by section 5).

181. In theory, a 100% value could denote a Republican district where all Republican voters are Black, and a 0% score could represent a Democratic district where no Democratic voters are Black. In practice, these scenarios never occur because large majorities of Black voters always prefer Democratic candidates.

FIGURE 5.
BLACK SHARES OF VOTERS SUPPORTING THE PREVAILING PARTY IN ACTUAL AND SIMULATED ALABAMA STATE-HOUSE DISTRICTS



In the distribution of Alabama's actual districts, there is a dramatic break between approximately 10% and 75%. Black voters make up either a supermajority of Democratic voters in Democratic districts or a small fraction of Republican voters in Republican districts. The district distribution has a glaring hole over all other values.[182] In contrast, this gulf is significantly narrower in the arrays of simulated districts. In considerable numbers of these districts, Black voters comprise between 50% and 75% of Democratic voters in Democratic districts. In some simulated districts, Black Democrats are even outnumbered by white Democrats, and the districts overall are still Democratic—a phenomenon that never occurs in Alabama's enacted plan.

Examining the distributions of actual and simulated districts in tandem, it is clear that a substantial volume of actual districts (roughly the eighth through the twenty-seventh districts from the top of the chart) have highly inflated shares of Black Democrats relative to the corresponding simulated districts. In most cases, the matching simulated districts are Democratic but feature fewer Black Democrats and more white Democrats. In a few cases, the matching simulated districts are Republican (and so no longer opportunity districts) thanks to their reduced populations of Black Democrats. What this pattern reveals is the marked overconcentration of Black Democrats, beyond what a nonracial redistricting process would produce, in about twenty current districts. These twenty districts have many more Black Democrats, compared to the race-blind baseline, and almost all other districts contain fewer of these voters.

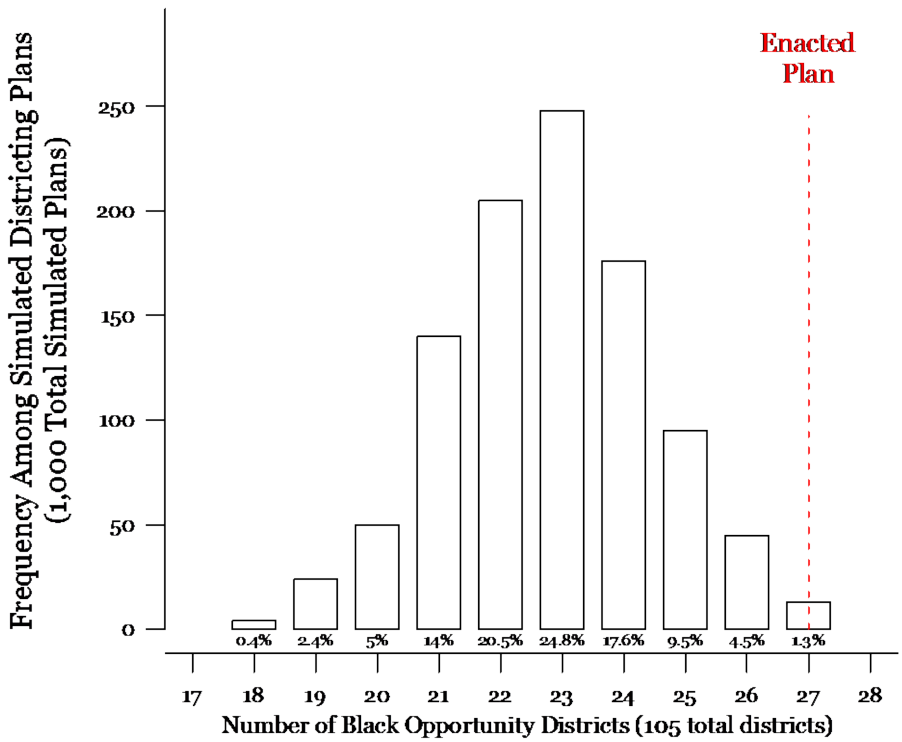
Figure 6 converts this information into (1) a histogram indicating the numbers of Black opportunity districts in the simulated maps and (2) a red dotted line showing the volume of Black opportunity districts in Alabama's enacted state-house plan (and so corresponding to the number of red stars in Figure 5). There are between eighteen and twenty-seven Black opportunity districts in the simulated maps, with twenty-one through twenty-four being the most common results. But there are twenty-seven Black opportunity districts in the enacted plan: an outcome that very rarely occurs in the simulations (only about 1% of the time) and that exceeds by four the number of Black opportunity districts in the median simulated map.[183] The enacted plan therefore includes considerably

182. For a similar finding, see Stephanopoulos, *supra* note 173, at 99-102, which shows that Republican-drawn districts in states formerly covered by section 5 of the VRA rarely have minority citizen voting-age population shares in the range of 30 to 50%.

183. For the sake of simplicity, we focus on the median map of each set of simulations throughout this Article. The median, of course, is nothing more than the midpoint of a distribution and so does not convey other information that might be useful about the distribution. For this reason, we also discuss other salient aspects of certain sets of simulations. In criticizing our emphasis on the median simulated map, *see* Duchin & Spencer, *supra* note 149, at 761-67, more districts in which African American voters may elect their preferred candidates than most maps generated on nonracial grounds. Charts analogous to Figures 5 and 6 are included in the online appendix for all other states in this study.[184]

FIGURE 6.

BLACK OPPORTUNITY DISTRICTS IN ACTUAL AND SIMULATED ALABAMA STATE-HOUSE PLANS



We turn next to Illinois, which differs in several important respects from Alabama. It is a midwestern state that was uncovered by section 5 of the VRA; it has substantial African American *and* Hispanic populations; and its state-house

Duchin and Spencer overlook that we often explore – and always display – other characteristics of distributions, including their overall ranges. Because the median is a helpful summary statistic about a distribution, moreover, other users of redistricting algorithms (including Duchin and Spencer) commonly refer to it. *See, e.g.*, Bangia et al., *supra* note 112, at 6-7 (showing the properties of median simulated maps); Duchin & Spencer, *supra* note 149, at 763-67 (same); *Comparison of Districting Plans for the Virginia House of Delegates*, METRIC GEOMETRY & GERRYMANDERING GROUP 4-5 (Nov. 2018), https://mggg.org/VA-report.pdf [https://perma.cc/BPQ9-BL3E] (same).

184. *See* Appendices A and B.

plan was passed by a unified Democratic government.[185] As illustrated in Figure 7, several Black opportunity districts in the enacted plan (roughly the fourteenth through the nineteenth and the twenty-first through the twenty-second districts from the top of the chart) have inflated shares of Black Democrats relative to the corresponding simulated districts. Of these, the pair of Black opportunity districts to the left of the 50% line are particularly notable.[186] Most of the matching simulated districts for these enacted districts are *not* opportunity districts, meaning that these enacted districts enable Black voters to elect their preferred candidates by packing them compared to districts drawn using race-blind criteria. Also, interestingly, a few Black opportunity districts in the enacted plan (roughly the first through the fifth districts from the top of the chart) have deflated shares of Black Democrats relative to the corresponding simulated districts. Black voters were apparently kept out of these districts to avoid their overconcentration. And still other Black opportunity districts in the enacted plan (roughly the sixth through the thirteenth districts from the top of the chart) have neither inflated nor deflated shares of Black Democrats compared to the race-blind baseline. These red stars lie within the clouds of gray stars and so could well have arisen from a nonracial redistricting process.

In sum, as displayed in Figure 8, the simulated Illinois state-house maps have between fifteen and twenty-four Black opportunity districts, with a median of nineteen. By comparison, the enacted plan has twenty-one Black opportunity districts: two more than the midpoint of the simulations and an uncommon result (occurring about 11% of the time) when districts are created on nonracial grounds. This divergence between the status quo and the race-blind baseline is thus discernible but less stark than in Alabama's case.

185. The other states in our dataset with state-house plans enacted by unified Democratic governments are Arkansas, Delaware, and Maryland. The other states with significant African American *and* Hispanic populations are Florida, New York, and Texas.

186. These are coalition districts where Black and Hispanic Democratic voters *combined* outnumber white Democratic voters.

FIGURE 7.

BLACK SHARES OF VOTERS SUPPORTING THE PREVAILING PARTY IN ACTUAL AND SIMULATED ILLINOIS STATE-HOUSE DISTRICTS

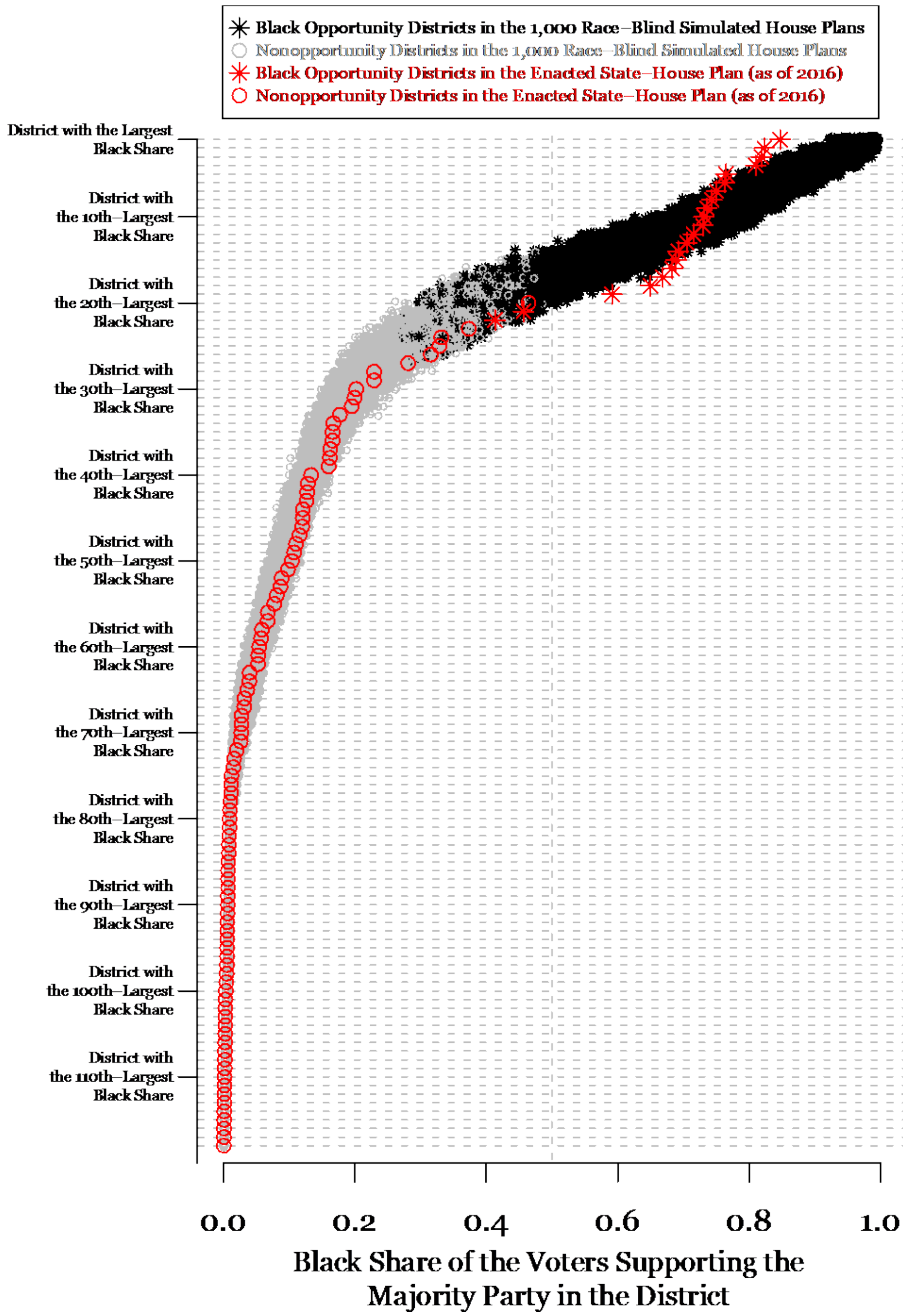
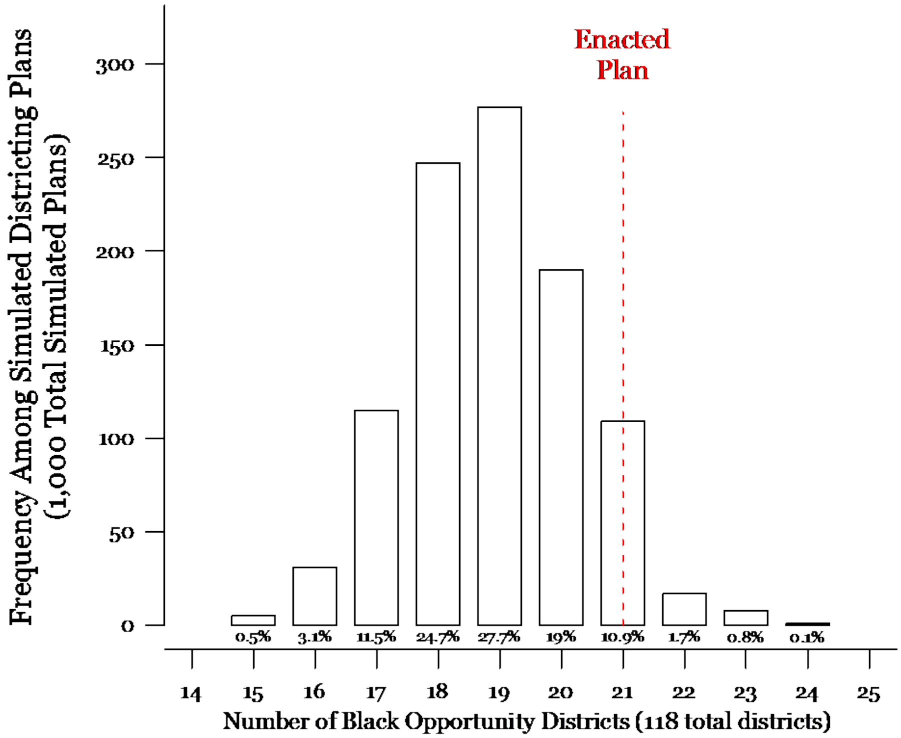


FIGURE 8.
BLACK OPPORTUNITY DISTRICTS IN ACTUAL AND SIMULATED ILLINOIS STATE-HOUSE PLANS



For a final example, consider Florida: a southeastern state mostly uncovered by section 5 of the VRA, with substantial African American and Hispanic populations (some of whom prefer Republican candidates), and with a state-house plan designed by a unified Republican government (though pursuant to stringent state-constitutional requirements). Figure 9 shows that most Hispanic opportunity districts in the enacted plan have shares of Hispanic backers of the prevailing party that fall within the ranges of the corresponding simulated districts. The same is true for nonopportunity districts in the enacted plan: the vast majority have demographic compositions that would be unsurprising given the application of nonracial criteria. On the whole, the distributions of actual and simulated districts are plainly more similar for Florida than for Alabama or Illinois.

Note also the two nonopportunity districts in which Hispanics make up around 60% of the voters backing the prevailing Democratic candidate (the fifth and sixth enacted districts from the top of the chart). In any other state, these would be Hispanic opportunity districts. But in south Florida, they are not because most Cuban Hispanics in these districts favor Republican candidates, on average. These districts thus do not elect Hispanic candidates of choice despite their very large Hispanic populations. In a pattern that appears almost nowhere else in the country, less numerous Hispanic Democrats ally with white Democrats to stymie the preferences of more numerous Hispanic Republicans.

Overall, as indicated in Figure 10, the simulated Florida state-house maps have between eight and thirteen Hispanic opportunity districts, with a median of ten. The enacted plan, on the other hand, has seven such districts, three fewer than the midpoint of the simulations and a result that the algorithm never produces. Accordingly, it is not the case that all existing plans overrepresent minority voters relative to the race-blind baseline; Florida, at least, is an exception to this generalization.

FIGURE 9.

HISPANIC SHARES OF VOTERS SUPPORTING THE PREVAILING PARTY IN ACTUAL AND SIMULATED FLORIDA STATE-HOUSE DISTRICTS

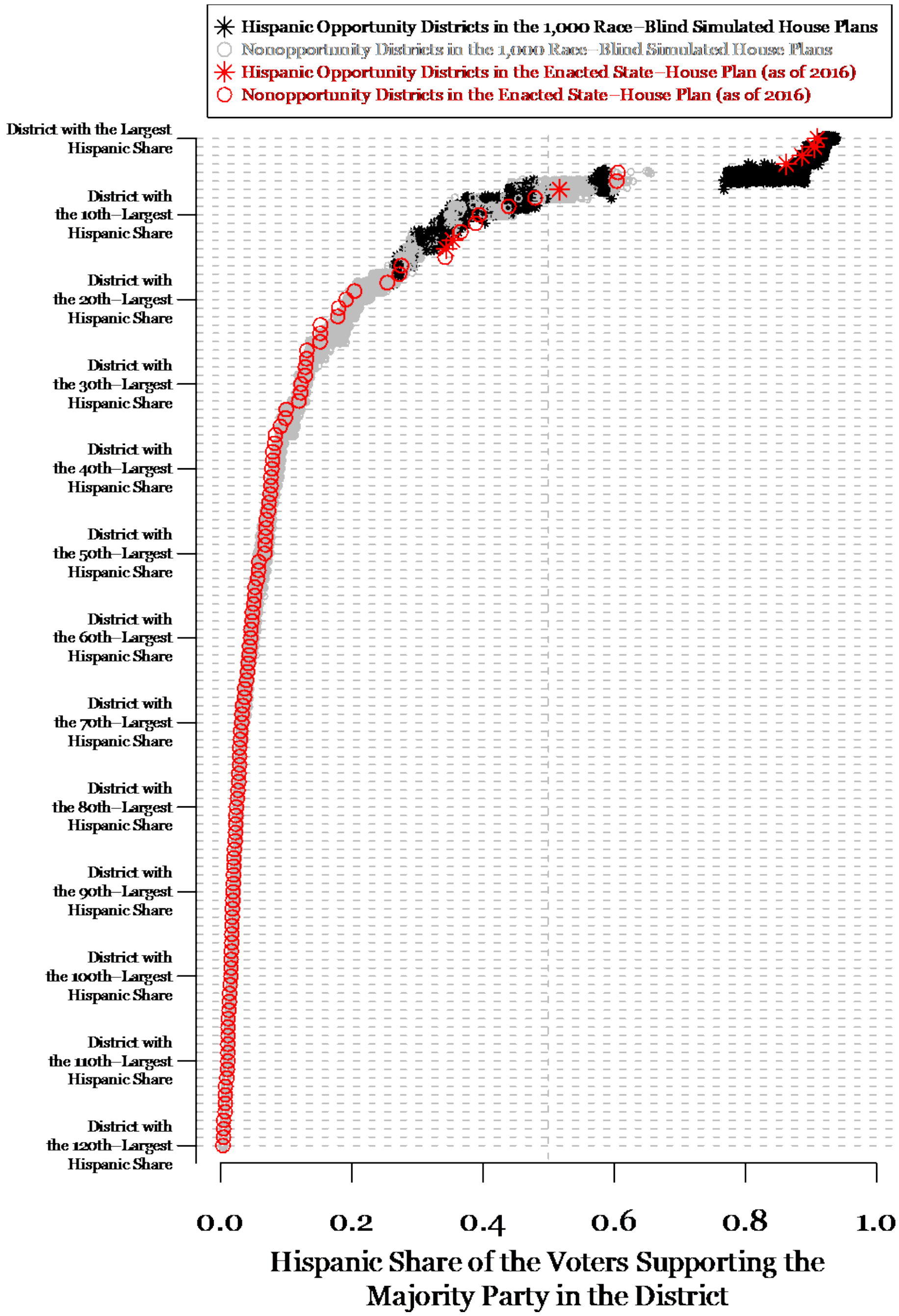
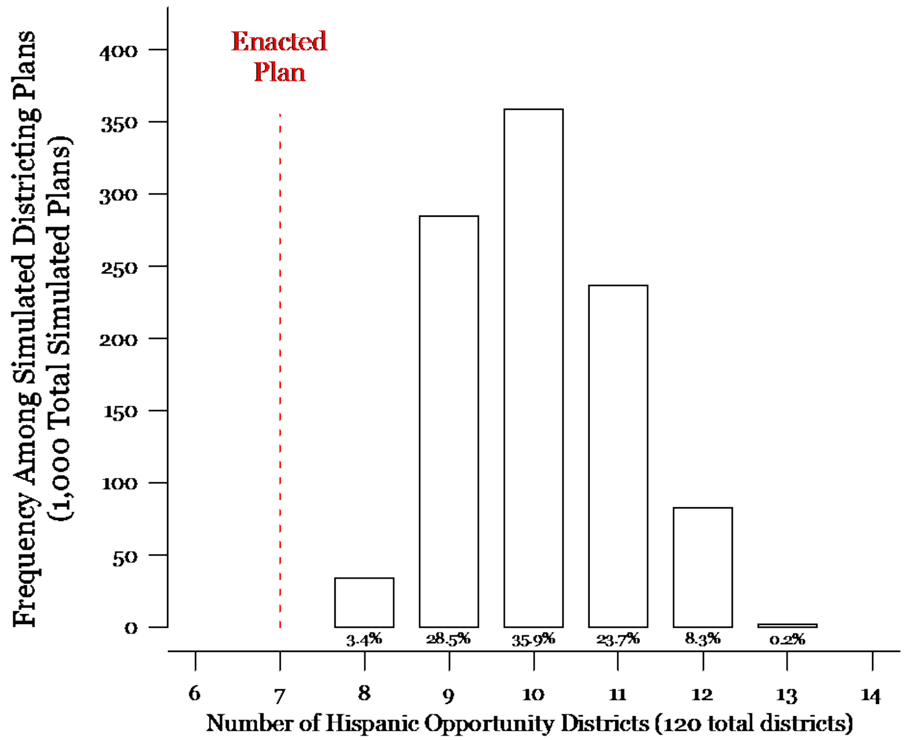


FIGURE 10.
HISPANIC OPPORTUNITY DISTRICTS IN ACTUAL AND SIMULATED FLORIDA STATE-HOUSE PLANS



B. All States

Of course, Alabama, Illinois, and Florida are just three of the nineteen states in our dataset. There is no guarantee that they are representative of all states with sizable minority populations. To resolve this concern, Figures 11 and 12 present our results for all states in our study. The red stars in the charts represent the proportions of minority opportunity districts in the enacted state-house plans. The histograms denote the distributions of opportunity districts in the simulated state-house maps. The blue circles mark the levels at which minority groups would achieve perfectly proportional representation, exactly equal to their CVAPs. And Figures 11 and 12 address African American and Hispanic representation, respectively.[187]

187. The appendix includes this information in tabular form as well. *See* Appendix C.

It is evident that, in most states, enacted state-house plans have more opportunity districts than would typically arise if the lines were drawn on nonracial grounds. Several states resemble Alabama[188] in having at least five percentage points more opportunity districts compared to the race-blind baseline: for example, California (19% Hispanic opportunity districts in the enacted plan, 10% in the median simulated map) and Louisiana (29% Black opportunity districts in the enacted plan, 24% in the median simulated map). Other states are more like Illinois[189] in having two or three percentage points more opportunity districts relative to the race-blind baseline: for example, New Mexico (23% Hispanic opportunity districts in the enacted plan, 20% in the median simulated map) and New York (23% Black opportunity districts in the enacted plan, 20% in the median simulated map). A few states, however, resemble Florida[190] in providing equivalent representation—or even modest underrepresentation—to minority voters compared to a nonracial redistricting process: for example, Nevada (0% Hispanic opportunity districts in the enacted plan, 2% in the median simulated map) and North Carolina (22% Black opportunity districts in the enacted plan, 23% in the median simulated map). As a group, enacted plans have a median of almost two percentage points more opportunity districts than median simulated maps, with a standard deviation of nearly three points.[191]

While this overrepresentation relative to the race-blind baseline is our key finding here, Figures 11 and 12 also document another kind of discrepancy: between the share of opportunity districts in each enacted state-house plan and the fraction of these districts that would be required for minority voters to attain *proportional* representation. In most states in our dataset, African American and/or Hispanic voters are underrepresented compared to the proportionality baseline. This underrepresentation is particularly high in states like Arizona (3% Hispanic opportunity districts in the enacted plan, 22% Hispanic CVAP) and Delaware (10% Black opportunity districts in the enacted plan, 21% Black CVAP). The underrepresentation is low or nonexistent in states like North Carolina (22% Black opportunity districts in the enacted plan, 22% Black CVAP) and Texas (12% Black opportunity districts in the enacted plan, 13% Black CVAP). And minority voters are disproportionally *over*represented in states like New

188. Twenty-six percent of Alabama's actual state-house districts are African American opportunity districts, compared to 22% in the median simulated map.

189. Eighteen percent of Illinois's actual state-house districts are African American opportunity districts, compared to 16% in the median simulated map.

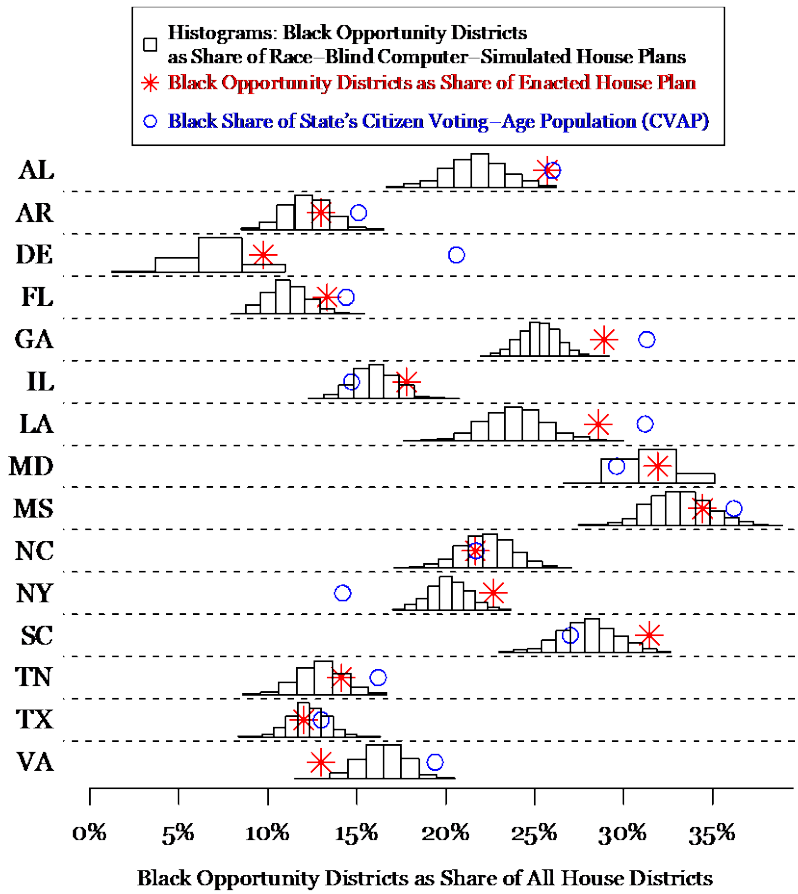
190. Six percent of Florida's actual state-house districts are Hispanic opportunity districts, compared to 8% in the median simulated map.

191. The number of cases is small enough that a formal statistical comparison is not necessarily meaningful, and, unsurprisingly, a Mann-Whitney *U* test does not indicate a difference in means at conventional significance levels ($z = 0.626$, $p = 0.531$).

York (23% Black opportunity districts in the enacted plan, 14% Black CVAP) and South Carolina (32% Black opportunity districts in the enacted plan, 27% Black CVAP). On the whole, minority underrepresentation relative to the proportionality baseline has a median around two percentage points, with a standard deviation close to seven points.[192]

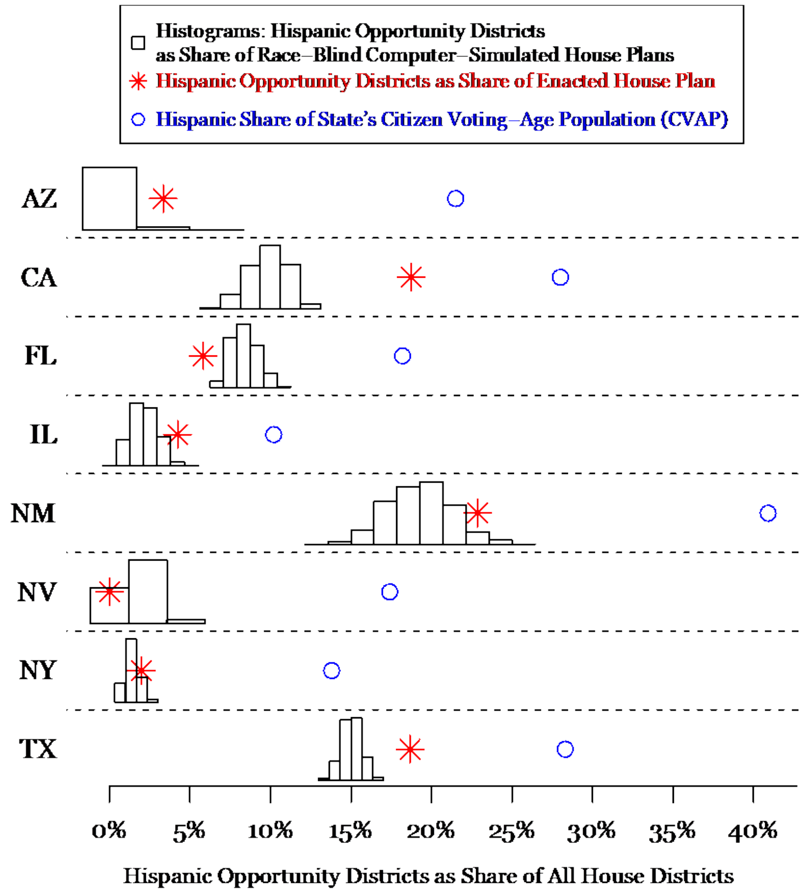
FIGURE 11.

BLACK OPPORTUNITY DISTRICT SHARES IN ACTUAL AND SIMULATED STATE-HOUSE PLANS



192. Here, a Mann-Whitney *U* test comes close to indicating a difference in means at the 10% significance level ($z = 1.571$, $p = 0.116$).

FIGURE 12.
HISPANIC OPPORTUNITY DISTRICT SHARES IN ACTUAL AND SIMULATED STATE-HOUSE PLANS



Focusing on the former gap[193] – between the share of opportunity districts in each enacted state-house plan and the median fraction of these districts in each set of simulated maps – we make some rough first cuts to try to understand the variation from state to state. (We cannot perform more sophisticated analyses, let alone prove causation, with only a couple dozen data points at a single moment in time.) Figure 13, then, presents box plots of the divergence between the status quo and the race-blind baseline for three pairings: (1) states formerly

193. With respect to the latter gap – between the share of opportunity districts in each enacted plan and proportional representation – one factor jumps out as an explanation. Hispanic voters are much more disproportionally underrepresented (a median of twelve percentage points) than are Black voters (a median of one percentage point). This difference is so large that a Mann-Whitney *U* test clearly confirms it ($z = 3.615$, $p = 0.0003$) despite the small number of cases.

covered by section 5 of the VRA versus all other states; (2) plans enacted by unified Republican governments versus plans designed by all other actors; and (3) states where minority voters are more residentially integrated versus states where they are more segregated.[194]

First, it is apparent that there are more opportunity districts, compared to the race-blind baseline, in states formerly covered by section 5 than in other states.[195] In the nine formerly covered states in our dataset, the share of opportunity districts in the enacted plan is a median of 3.3 percentage points larger than the corresponding fraction in the median simulated map. In the ten states that were never fully or mostly covered, in contrast, the enacted plan's share of opportunity districts is a median of 1.7 percentage points larger than that of the median simulated map.[196] Second, the divergence between the status quo and the usual outcome of a nonracial redistricting process is about the same no matter which actor was responsible for the enacted plan. This divergence is a median of 2.1 percentage points in the ten states in our dataset whose plans were designed by unified Republican governments. Similarly, the divergence is a median of 1.7 percentage points in the nine states where unified Democratic governments, divided governments, commissions, or courts drew the lines.[197] And third, minority voters who are more residentially integrated are more overrepresented relative to the race-blind baseline than are more segregated minority voters. In the half of the states in our dataset where minority voters are more integrated, the enacted plan has a median of 2.9 percentage points more opportunity districts than the median simulated map. On the other hand, in the half of the states where minority voters are more segregated, the enacted plan has a median

194. In these plots, each box is bounded by the twenty-fifth- and seventy-fifth-percentile values and bisected by the median value. Each box's whiskers extend to the upper and lower adjacent values, and outliers beyond those values are displayed separately.

195. Because of the crudeness of these first cuts, we make no claims about the magnitude or statistical significance of these differences. We do note the results of Mann-Whitney *U* tests, however, while reiterating their limited value given the small number of cases.

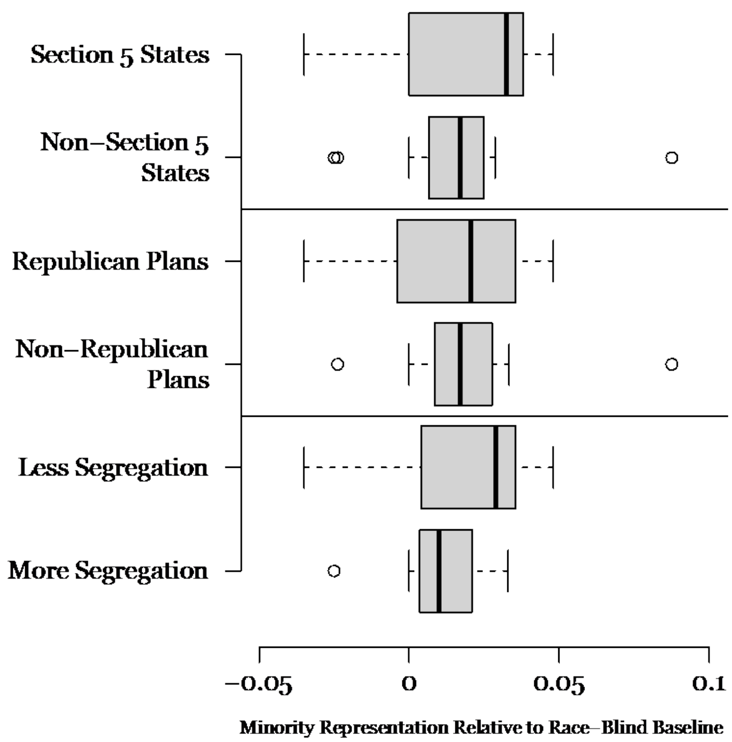
196. California, Florida, and New York are the states in our dataset that were partly covered by section 5. We count North Carolina as fully covered since its covered counties included most areas with significant minority populations. *See* Civil Rights Div., *Jurisdictions Previously Covered by Section 5*, U.S. DEP'T JUST. (Sept. 11, 2020), http://www.justice.gov/crt/jurisdictions-previously-covered-section-5 [https://perma.cc/HX6D-BTRB]. A Mann-Whitney *U* test does not indicate a difference in means at conventional significance levels (z = 1.086, p = 0.277).

197. Unsurprisingly, a Mann-Whitney *U* test does not indicate a difference in means at conventional significance levels (z = 0.062, p = 0.951).

of 1.0 percentage points more opportunity districts than the median simulated map.[198]

FIGURE 13.

DIFFERENCES IN SHARES OF OPPORTUNITY DISTRICTS BETWEEN ENACTED AND MEDIAN SIMULATED STATE-HOUSE PLANS



C. Explanations

To summarize, we have shown that most enacted state-house plans have more minority opportunity districts than would typically arise from the application of nonracial criteria. We have also shown that most plans have *fewer* opportunity districts than would be required to achieve proportional representation

198. One of us previously calculated residential segregation scores for Black and Hispanic residents in all states. *See* Stephanopoulos, *supra* note 24, at 1345-48. We also note that residential segregation is a continuous, not a binary, variable. We divided the cases into two groups for this variable for the sake of consistency with our other variables, which are binary. And a Mann-Whitney *U* test does not indicate a difference in means at conventional significance levels (z = 1.249, p = 0.212).

for minority groups. With respect to the former gap, we cannot make claims about causation, but we can posit some hypotheses based on our suggestive comparisons. Greater minority overrepresentation, relative to the race-blind baseline, may be linked to (1) coverage by section 5 of the VRA, and (2) the higher residential integration of minority voters, but seemingly *not* to (3) Republican control over redistricting.

Our finding that a nonracial redistricting process would generally yield fewer opportunity districts than currently exist is consistent with the limited literature on the subject. When Carmen Cirincione, Thomas Darling, and Timothy O'Rourke randomly generated 10,000 South Carolina congressional maps without taking race into account, not one of them contained the single majority-Black district of the enacted 1990s plan.[199] Similarly, when Daniel Magleby and Daniel Mosesson produced 10,000 congressional maps each for Mississippi, Texas, and Virginia, again at random and based on nonracial criteria, only about 31%, 16%, and 0% of them, respectively, included as many majority-minority districts as the enacted 2010s plans did.[200] Our conclusion for many state-house plans thus confirms and extends these scholars' results for a few congressional plans.

Our conclusion should also come as no surprise to observers familiar with the history of redistricting in the shadow of the VRA. After Congress amended section 2 in 1982[201] and the Supreme Court announced the *Gingles* prongs in 1986,[202] many states in the early 1990s believed they had to create as many opportunity districts as possible.[203] Contributing to this view was the absence of the proportionality baseline, which sets an upper limit to how much representation minority groups can legally claim, but which was not formalized until the 1994 *De Grandy* case.[204] The Department of Justice further fueled states' perceived need to draw more opportunity districts through what the Court disparagingly labeled its "max-[B]lack" policy.[205] Under this policy, which was in effect only in the 1990s redistricting cycle, the Department refused to preclear plans in

199. *See* Cirincione et al., *supra* note 109, at 201.

200. *See* Magleby & Mosesson, *supra* note 138, at 162-63.

201. *See* Voting Rights Act Amendments of 1982, Pub. L. No. 97-205, § 3, 96 Stat. 131, 134 (codified at 52 U.S.C. § 10301 (2018)).

202. *See* Thornburg v. Gingles, 478 U.S. 30, 48-51 (1986).

203. *See, e.g.*, Michael J. Pitts, *The Voting Rights Act and the Era of Maintenance*, 59 ALA. L. REV. 903, 918-25 (2008) (describing this so-called "Era of Descriptive Representation").

204. *See* Johnson v. De Grandy, 512 U.S. 997, 1013-24 (1994).

205. *See* Ala. Legislative Black Caucus v. Alabama, 575 U.S. 254, 298-99 (2015) (Thomas, J., dissenting); Miller v. Johnson, 515 U.S. 900, 906-08, 917-18, 924-25 (1995).

states covered by section 5 unless they maximized the number of majority-minority districts.[206]

Eventually, states' legal incentives to form more opportunity districts lessened. The Court adopted the proportionality baseline for section 2 (and also limited the provision's reach in other ways).[207] The Court held that section 5 neither requires the maximization of minority representation[208] nor permits preclearance to be denied due to an alleged section 2 violation.[209] And the Court recognized a whole new cause of action under the Equal Protection Clause rendering highly suspect the construction of districts for predominantly racial reasons.[210] These developments came too late, however, to undo most of the opportunity districts that had been created in the early 1990s. Only a few of these districts were ever struck down as unconstitutional racial gerrymanders.[211] The vast majority of them were preserved in the 2000s and 2010s redistricting cycles, altered only slightly to make their appearances somewhat less conspicuous.[212]

Our findings are consistent with this history. Most state-house plans have more opportunity districts than would usually emerge from a nonracial redistricting process. This is hardly surprising since most states with large minority populations heavily considered race in the early 1990s, crafting many new majority-minority districts, and then retained these districts in subsequent redistricting cycles. The gap between the status quo and the race-blind baseline is also larger in states formerly covered by section 5. This may be because only formerly covered states were subject to the Department of Justice's aggressive enforcement of section 5 in the early 1990s. Only these states thus had two incentives to form more opportunity districts: avoiding liability under section 2 *and* assuring preclearance under section 5.

Additionally, minority voters are more overrepresented, compared to the race-blind baseline, when they are more residentially integrated. A possible explanation is that fewer opportunity districts arise at random under conditions of

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206. *See supra* note 205.

207. *See supra* notes 71-73 and accompanying text.

208. *See Miller*, 515 U.S. at 926-27.

209. *See* Reno v. Bossier Par. Sch. Bd., 520 U.S. 471, 480-85 (1997); *see also* Reno v. Bossier Par. Sch. Bd., 528 U.S. 320, 341 (2000) (further holding that section 5 is violated only by a retrogressive—not merely a discriminatory—purpose).

210. *See* Shaw v. Reno, 509 U.S. 630, 652 (1993) (introducing this "analytically distinct claim").

211. *See* Nicholas O. Stephanopoulos, *The Dance of Partisanship and Districting*, 13 HARV. L. & POL'Y REV. 507, 527 (2019) (tallying seventeen successful racial-gerrymandering challenges between 1993 and 2001).

212. *See* Pitts, *supra* note 203, at 942-45 (describing this "Era of Maintenance"); Stephanopoulos, *supra* note 24, at 1369 (showing near stasis in African American and Hispanic state-house representation in the 2000s and 2010s).

greater minority dispersion. But actual mapmakers, who do not draw lines by chance, are still able to create as many opportunity districts even when minority voters are more widely scattered. And the divergence between the status quo and the typical outcome when nonracial criteria are applied appears to be unaffected by the partisan identity of the redistricting authority. This could be because many current opportunity districts originated not in this cycle (when Republicans mostly controlled the mapmaking process) but rather in the early 1990s (when responsibility for redistricting was more mixed). It could also be because, as we discuss below, the optimal Republican strategy is not to form more opportunity districts, but instead to crack and pack Democratic voters across all (opportunity and nonopportunity) districts.[213]

A word is in order, too, about our finding that minority voters have failed to attain proportional representation in most states. How could this be, given the zeal with which opportunity districts were constructed in the early 1990s, a period when mapmakers could have reasonably thought the VRA required as many such districts as possible? The probable answer is a component of section 2 doctrine we do not emphasize in this Article: the first *Gingles* prong, which is satisfied only if an additional reasonably compact majority-minority district can be created.[214] In most states, it seems, minority voters are geographically distributed in such a way that a proportional share of reasonable-looking opportunity districts cannot be drawn.[215] Minority voters are overconcentrated in some areas, yielding inefficient *super*majority-minority districts. In other areas, they are too spatially dispersed for reasonably compact opportunity districts to circumscribe them. For both these reasons—and despite mapmakers' keen efforts—the opportunity districts that do exist usually provide minority voters with subproportional representation.[216]

Lastly, while we are most interested here in the *numbers* of opportunity districts, we should also comment on the *kinds* of these districts that we see in the enacted plans and the simulated maps. In most states in our dataset, many

213. *See infra* Part IV (discussing the intersection of race and partisanship in redistricting).

214. *See* Thornburg v. Gingles, 478 U.S. 30, 50-51 (1986).

215. We reiterate that the geographic distribution of minority voters is far from "natural" or "race-blind." To the contrary, it is the bitter legacy of generations of residential segregation and racial discrimination. *See supra* note 5.

216. *See, e.g.*, Stephanopoulos, *supra* note 24, at 1369-71 figs.4(a) & 4(b) (finding Black and Hispanic underrepresentation in state houses in 1975, 1995, and 2015). Of course, racial and ethnic minority groups are not alone in being underrepresented by our system of plurality-rule, single-member districts. That is the fate of most minority groups (especially groups with different political preferences from the majority) in this regime. *See, e.g.*, Micah Altman, *Modeling the Effect of Mandatory District Compactness on Partisan Gerrymanders*, 17 POL. GEOGRAPHY 989, 1001-03 (1998) (using redistricting simulations to show the underrepresentation of all types of political minority groups under most circumstances).

enacted opportunity districts have larger shares of minority voters (and larger shares of minority Democrats) than do the corresponding districts in the simulated maps. In other words, many enacted opportunity districts are more minority-heavy than would be expected if the lines were drawn on nonracial grounds. This overconcentration of minority voters is likely a consequence of mapmakers' historical tendency to create majority-minority (or even more packed) opportunity districts.[217] Such districts have never been required by the VRA[218] and indeed may raise constitutional questions due to their apparent reliance on racial data.[219] Nor are such districts necessary to elect minority-preferred candidates, who can prevail in crossover districts in most circumstances.[220] Nevertheless, numerous states, over numerous redistricting cycles, opted to design such districts in order to satisfy their perceived VRA obligations. The prevalence of opportunity districts with overconcentrated minority populations, relative to the race-blind baseline, is a product of these line-drawing choices.

D. Implications

Our main result—the extra minority opportunity districts in most enacted state-house plans compared to the typical outcome of a nonracial redistricting process—would have dramatic implications if courts were to follow Judge Easterbrook's suggestion and adopt the race-blind baseline. First, most section 2 suits seeking the formation of new opportunity districts would fail. Even if these challenges were ironclad as to every antecedent issue, they would founder upon reaching the race-blind baseline, since it would then be clear that minority voters are already overrepresented relative to that benchmark. Suppose, for example, that Black plaintiffs in Alabama could show that another, reasonably compact majority-Black state-house district could be drawn (thus satisfying the first *Gingles* prong). Suppose, too, that Black and white Alabama voters are highly racially polarized (thus meeting the second and third *Gingles* prongs[221]) and that the state has a sordid history of racial discrimination (thus proving most of the so-called "Senate factors"[222]). In the end, none of this would matter. The

217. For a good discussion of this historical tendency, see Pitts, *supra* note 203, at 918-25.

218. *See supra* notes 170-173 and accompanying text.

219. *See supra* note 210 and accompanying text.

220. *See, e.g.*, Charles Cameron, David Epstein & Sharyn O'Halloran, *Do Majority-Minority Districts Maximize Substantive Black Representation in Congress?*, 90 AM. POL. SCI. REV. 794, 804 (1996); Bernard Grofman, Lisa Handley & David Lublin, *Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence*, 79 N.C. L. REV. 1383, 1407-09 (2001).

221. *See* Thornburg v. Gingles, 478 U.S. 30, 51 (1986).

222. *See id.* at 36-37 (listing the factors found in the Senate report that accompanied section 2's 1982 amendment).

plaintiffs would still lose since they would be asking for another Black opportunity district while four more such districts already exist compared to the race-blind baseline.[223]

Second, states could dismantle substantial numbers of current opportunity districts without violating section 2. As long as they preserved at least as many opportunity districts as would usually arise from the application of nonracial criteria, they would be exempt from liability. Imagine, for instance, that Judge Easterbrook's idea was implemented and that Alabama then eliminated one, two, or even four African American opportunity districts. Of course, litigants would be able to demonstrate that these districts could be restored; they obviously existed in the prior state-house plan. But again, this showing (like the satisfaction of most other section 2 elements) would ultimately be irrelevant. The claim would fail because even after cutting Black representation from 26% to as low as 22%—which would be a three-decade nadir[224]—Alabama would still not have dropped below the race-blind baseline.

And third, some current opportunity districts that were *not* dismantled could be attacked as unlawful racial gerrymanders. Under Supreme Court precedent, districts are subject to strict scrutiny if "race was the predominant factor motivating" their construction.[225] It may be a plausible inference that certain opportunity districts were primarily designed for racial reasons if their volume exceeds that which would generally result from a nonracial redistricting process. Why would so many opportunity districts exist, after all, but for an overriding racial objective? If strict scrutiny were triggered, additionally, states would be unable to justify their line-drawing choices on the basis of section 2 compliance. In the legal regime contemplated by Judge Easterbrook, section 2 would only require states to create opportunity districts up to (at most) the race-blind baseline. It would never compel states to form opportunity districts beyond that benchmark—and so could not be invoked to defend such districts in constitutional litigation.

It should go without saying that this analysis applies only to plans that include *more* opportunity districts than typically emerge when the lines are drawn on nonracial grounds. In the handful of plans where minority voters are *under*represented relative to the race-blind baseline (like Hispanics in Florida and African Americans in North Carolina), exactly the opposite conclusions would follow. Section 2 suits seeking the formation of new opportunity districts would be strengthened by minority voters' underrepresentation. States could not eliminate existing opportunity districts without falling even further below the race-

223. *See supra* Section III.A.

224. Data on Black and Hispanic state-house representation over time is on file with the authors.

225. Miller v. Johnson, 515 U.S. 900, 916, 920 (1995).

blind baseline (and thus into even deeper legal jeopardy). And racial-gerrymandering claims against existing opportunity districts would be hamstrung by the fact that those districts could easily be the product of nonracial criteria.

Another caveat is that courts have always treated the proportionality baseline as highly probative but not actually dispositive.[226] If the race-blind baseline were to work the same way, then plaintiffs could occasionally prevail even if there were already more opportunity districts than would usually arise from a nonracial redistricting process. Such overrepresentation would undermine plaintiffs' section 2 claims but not doom them. Relatedly, both section 2 and the Equal Protection Clause are violated by *intentional* racial discrimination.[227] It could potentially be inferred that a state had an invidious motive if it dismantled numerous current opportunity districts. This discriminatory purpose would invalidate the redistricting even if it did not cause the state's plan to drop below the race-blind baseline.[228]

Furthermore, while section 2 would provide scant protection under Judge Easterbrook's proposal, section 5 previously safeguarded many opportunity districts and would do so again if its coverage formula were reenacted. According to the Supreme Court, section 5 prohibits "retrogression": any reduction in the number of districts, in a covered state, in which minority voters are able to elect their preferred candidates.[229] Section 5 is inoperative, at present, due to the Court's decision in *Shelby County* invalidating its mechanism for determining which jurisdictions are subject to preclearance.[230] But if a future Congress updated this mechanism (and a future Court upheld the revised formula[231]), then section 5 would, once more, prevent covered states from eliminating opportunity

226. As Justice O'Connor once put it, "[P]roportionality . . . is *always* relevant evidence in determining vote dilution, but is *never* itself dispositive." Johnson v. De Grandy, 512 U.S. 997, 1025 (1994) (O'Connor, J., concurring).

227. *See* S. REP. NO. 97-417, at 27 (1982), *as reprinted in* 1982 U.S.C.C.A.N. 177, 205 (stating that section 2 "[p]laintiffs must *either* prove [discriminatory] intent, *or*, *alternatively*, must show" discriminatory effect (emphasis added) (footnote omitted)).

228. *Cf.* Bartlett v. Strickland, 556 U.S. 1, 20 (2009) (plurality opinion) (holding that other standard aspects of vote-dilution doctrine "do[] not apply to cases in which there is intentional discrimination against a racial minority").

229. *See* Beer v. United States, 425 U.S. 130, 141 (1976).

230. Shelby County v. Holder, 570 U.S. 529, 556-57 (2013).

231. It is far from certain that the current Court would uphold either a new coverage formula or the institution of preclearance itself. *See id.* at 547 (stating that the arguments that "the preclearance requirement . . . is now unconstitutional . . . have a good deal of force").

districts. The provision would do so, moreover, even if covered states were already above the race-blind baseline.[232]

Lastly, while a racial-gerrymandering claim may be *bolstered* by the existence of more opportunity districts than the typical outcome of a nonracial redistricting process, that is not enough to *win* the challenge. For one thing, a racial-gerrymandering claim must target a particular district.[233] But any given opportunity district might not have been formed for a predominantly racial reason even if, overall, there are extra opportunity districts compared to the race-blind baseline. Statewide statistics do not prove a district-specific motive.[234] For another, even if section 2 compliance were no longer a viable defense for opportunity districts in excess of the race-blind baseline, the pursuit of partisan advantage could still justify them. As we explain in the next Part,[235] Republican mapmakers sometimes favor creating opportunity districts for the sake of partisan gain. If this motive predominates, then race does not, and strict scrutiny does not apply.[236]

For these reasons, we doubt that the full consequences of Judge Easterbrook's idea would quickly materialize if it were adopted. Not all section 2 claims would fail in states above the race-blind baseline, nor would all opportunity districts over that benchmark be struck down. Instead, the more likely scenario is that the race-blind baseline would operate much like the proportionality baseline has over the past few decades: as a steady thumb on the scale pushing redistricting outcomes in its direction. Again, the proportionality baseline has induced states to create many more opportunity districts, but not actually to achieve proportional representation for minority voters.[237] Likewise, we would expect the race-blind baseline to result in the dismantling of numerous existing opportunity districts—but not so many as to match the usual product of a nonracial redistricting process.

What about the *kinds* (not the *numbers*) of opportunity districts? What implications would a shift to the race-blind baseline have for them? Recall that, in

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232. Of course, a Court that adopted the race-blind baseline in the section 2 context could do so with respect to section 5 as well. In that case, section 5, even if revived, would be no shield against the elimination of existing opportunity districts.

233. *See, e.g.*, Ala. Legislative Black Caucus v. Alabama, 575 U.S. 254, 262 (2015) ("A racial gerrymandering claim . . . applies district-by-district. It does not apply to a State considered as an undifferentiated 'whole.'").

234. Still, statewide statistics are certainly probative. *See, e.g.*, *id.* at 1265 ("Voters, of course, can present statewide *evidence* in order to prove racial gerrymandering in a particular district." (citing Miller v. Johnson, 515 U.S. 900, 916 (1995))).

235. *See infra* Part IV.

236. *See, e.g.*, Easley v. Cromartie, 532 U.S. 234, 241 (2001) (explaining that strict scrutiny is triggered only if "the legislature's motive was predominantly racial, not political").

237. *See supra* Section III.B.

most cases, our race-blind simulations yield substantial volumes of opportunity districts that are less minority heavy than their analogues in the enacted plans.[238] Some of these simulated districts still have majorities of minority voters; others are crossover districts where pluralities of minority voters would elect their preferred candidates with the assistance of some white voters. States that fully embraced the race-blind baseline by randomly generating their district maps, then, could expect to see fewer supermajority-minority districts, more bare-majority-minority districts, and more crossover districts. Even keeping constant the numbers of opportunity districts, that is, their makeups would change by becoming less minority heavy. The opportunity districts produced by a nonracial mapmaking algorithm would have smaller minority populations than the opportunity districts historically created by human line-drawers.

As for states that did not make the leap to randomized race-blind redistricting, they could come under pressure, too, to unpack their opportunity districts. Say that Judge Easterbrook's proposal was implemented and that Alabama then constructed twenty-three Black opportunity districts—exactly the volume that would typically arise if nonracial criteria were applied.[239] But say that Alabama's opportunity districts had larger Black populations than their randomly generated analogues under the race-blind baseline: huge rather than bare Black majorities, and Black majorities instead of sufficiently sizable pluralities. Then, a plaintiff could mount a plausible racial-gerrymandering challenge against these overconcentrated opportunity districts. Yes, the *number* of opportunity districts would be no different under a nonracial redistricting process. But their *racial composition* would be. Randomly produced opportunity districts would not be as crammed with Black voters as Alabama's actual opportunity districts. Race must therefore explain the creation of the actual districts, which, consequently, must satisfy strict scrutiny to be upheld.

Or at least so a plaintiff might argue. Alabama could respond, again, that aggregate statistics do not establish a district-specific purpose.[240] Just because its actual opportunity districts, *overall*, have larger Black populations than their randomly generated analogues does not mean that any *particular* district was drawn for a predominantly racial reason. Alabama could also cite partisanship as an alternative justification.[241] On this account, it packed Black voters beyond the expected level given the application of nonracial criteria in order to overconcentrate *Democratic* voters and thus to advantage Republicans in the rest of the map. Thanks to these possible defenses, we think that Judge Easterbrook's idea would

238. *See supra* Section III.A.

239. *See id.*

240. *See supra* notes 233-234 and accompanying text.

241. *See supra* notes 235-236 and accompanying text.

have the same significant—but not maximal—effects on the kinds of opportunity districts as it would on the numbers of opportunity districts. Just as it would probably reduce the volumes of opportunity districts, but not all the way to the race-blind baseline, it would likely unpack the opportunity districts that *are* formed, but not to the same extent as a nonracial redistricting process would. Countervailing legal and political forces would prevent the full realization of Judge Easterbrook's vision.

IV. THE NEW WORLD OF PARTISAN REPRESENTATION

Importantly, the dismantling and unpacking of minority opportunity districts might not be the only consequences of the race-blind baseline. It could also have *partisan* implications by changing the mixes of Democratic and Republican voters in certain districts. These potential partisan effects are our subject in this Part. We begin by identifying the links we expect to find between minority and partisan representation.[242] According to the literature, there is a tradeoff between them, with the proportion of Republican districts rising as more opportunity districts are created. But we hypothesize that this tradeoff might be mitigated, or even negated, depending on which actor designs the districts and which party is preferred by nonminority voters.

To probe these relationships, we run a second set of simulations in which we instruct the algorithm to *equal* the existing number of opportunity districts in each state. In combination with the first simulation set, this enables us to compare (1) the partisan status quo; with (2) a redistricting process that ignores party but *not* race; and (3) a redistricting process that ignores party *and* race. This analysis yields several fascinating conclusions. For instance, Democrats would generally benefit if Republican-drawn plans were replaced by maps crafted by neutral actors—even if these maps retained all existing opportunity districts. Additionally, shifting from the current interpretation of section 2 to the race-blind baseline would advantage Republicans in southern states where white voters are heavily Republican, while barely affecting the partisan balance of power in nonsouthern states.

242. By "minority representation," we mean the kind of representation on which the VRA focuses—by elected officials who are the preferred choices of minority voters. *See* Stephanopoulos, *supra* note 24, at 1334-35. We do *not* mean *substantive* representation through policymaking that promotes minority voters' interests. *See id.* at 1380-93.

A. Linkages

Although the race-blind baseline itself has attracted limited academic attention,[243] much ink has been spilled on the connection between minority and partisan representation. Most studies of this topic have concluded that the two forms of representation are inversely related: as the fraction of minority opportunity districts increases in a state, the share of seats held by Democrats (the party preferred by most minority voters) declines.[244] To cite one prominent example, David Lublin and D. Stephen Voss show that Democrats lost between two and sixteen seats in each of ten southern state houses from 1991 to 1998 due to the rise in minority representation over this period.[245] Surveying this work, Adam B. Cox and Richard T. Holden discern "a rough consensus" in the literature that "drawing districts that contain a majority of minority voters . . . helps minority voters in those districts but hurts the Democratic Party more broadly."[246]

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243. *See supra* notes 138-141 and accompanying text.

244. In particular, numerous studies have found that Democrats lost around ten congressional seats in the 1990s due to the creation of additional opportunity districts. *See, e.g.*, DAVID T. CANON, RACE, REDISTRICTING, AND REPRESENTATION: THE UNINTENDED CONSEQUENCES OF BLACK MAJORITY DISTRICTS 74, 257 (1999) (summarizing these studies); DAVID LUBLIN, THE PARADOX OF REPRESENTATION: RACIAL GERRYMANDERING AND MINORITY INTERESTS IN CONGRESS 111-14 (1999) (same). Other studies have shown that congressional delegations and state legislatures tend to become more conservative when more opportunity districts are drawn. *See, e.g.*, CHRISTIAN R. GROSE, CONGRESS IN BLACK AND WHITE: RACE AND REPRESENTATION IN WASHINGTON AND AT HOME 66-67 (2011) (analyzing congressional delegations); Cameron et al., *supra* note 220, at 808 (same); David Epstein & Sharyn O'Halloran, *Measuring the Electoral and Policy Impact of Majority-Minority Voting Districts*, 43 AM. J. POL. SCI. 367, 392 (1999) (analyzing the South Carolina Senate).

245. *See* David Lublin & D. Stephen Voss, *Racial Redistricting and Realignment in Southern State Legislatures*, 44 AM. J. POL. SCI. 792, 802 tbl.2 (2000).

246. Cox & Holden, *supra* note 18, at 555; *see also* Georgia v. Ashcroft, 539 U.S. 461, 469 (2003) (summarizing witness testimony that "as the Black voting age population in a district increased beyond what was necessary," Republicans benefited statewide); SAMUEL ISSACHAROFF, PAMELA S. KARLAN, RICHARD H. PILDES & NATHANIEL PERSILY, THE LAW OF DEMOCRACY: LEGAL STRUCTURE OF THE POLITICAL PROCESS 940 (5th ed. 2016) ("[A] byproduct of concentrating minority voters into 'safe' districts is, necessarily, to empty the surrounding districts of minority voters, who typically support the Democratic Party.").

However, this consensus may be somewhat outdated. More recently, scholars have recognized that the tension between minority and partisan representation may be lessened by constructing opportunity districts with smaller minority populations. *See, e.g.*, 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, 1523, 1534-39 (2002) (describing how some mapmakers in the 2000s cycle created "coalitional districts" in which minority voters are not a majority of the electorate but can still succeed in electing their preferred—usually Democratic—candidates with support from some white voters).

Why would there be a tradeoff between forming opportunity districts and forming Democratic districts? In brief, because minority voters (especially African Americans) are very likely to be Democrats, while white voters are more apt to be Republicans.[247] As more minority voters are placed in opportunity districts, consequently, fewer minority voters are left for the larger pool of nonopportunity districts.[248] For an illustration of this dynamic, consider Alabama's 1990s state-house plan. It boosted the number of Black opportunity districts from 19 to 27 (out of 105).[249] The Black voters in the eight new opportunity districts were mostly transferred from adjacent nonopportunity districts, which became considerably more Republican after being stripped of their most reliable Democratic constituents. As a result, Democrats lost thirteen seats in the first election held under the 1990s plan and five more over the rest of the decade.[250]

Of course, any tradeoff between minority and partisan representation might be thought to work in both directions—producing Democratic losses when opportunity districts are constructed but Democratic *gains* when they are disassembled. Since the race-blind baseline would reduce the current number of opportunity districts,[251] a simple hypothesis is that it would simultaneously increase the number of Democratic districts. Some minority voters who are now in opportunity districts won by Democrats by large margins would end up in nonopportunity districts currently won by Republicans by narrower margins. This influx of minority voters (and Democrats) would flip some of the nonopportunity districts from Republican to Democratic control, thus bolstering Democrats' plan-wide position.

We call this a simple hypothesis because it ignores other factors that may influence the relationship between minority and partisan representation. One of these is control of the redistricting process. In previous work, one of us has found that when Democrats draw the lines, they are able to create more opportunity districts while sacrificing few, if any, Democratic districts. They simply avoid overconcentrating minority voters (or Democrats) in opportunity districts,

247. *See, e.g.*, Stephanopoulos, *supra* note 24, at 1354-59 (calculating white, Black, and Hispanic voting preferences by state and year over the 1972-2012 period).

248. *See, e.g.*, *id.* at 1384 (describing this tradeoff in more detail).

249. Data on Black and Hispanic state-house representation over time is on file with the authors.

250. These election results are also on file with the authors. *See supra* note 144. Note as well that Alabama's 1980s and 1990s state-house plans were both enacted by unified Democratic governments. The partisanship of the actor responsible for redistricting thus cannot explain the tradeoff here between minority and partisan representation.

251. *See supra* Part III.

allowing more of them to be allocated to nonopportunity districts.[252] Conversely, when Republicans are in charge of redistricting, the tradeoff between minority and partisan representation is starker. This is because Republicans tend to pack minority voters (and Democrats) in opportunity districts, rendering nearby nonopportunity districts whiter and more Republican.[253]

Accordingly, we might expect Democratic gains under the race-blind baseline to be largest when the prior plan was designed by Republicans and the new one is crafted by Democrats. In this scenario, the opportunity districts in the prior plan would have been heavily packed, leaving many minority voters (and Democrats) to be more efficiently distributed after the elimination of some of these districts. On the other hand, Republicans might even benefit under the race-blind baseline when the prior plan was Democratic and the new one is Republican. In this configuration, minority voters (and Democrats) would not previously have been overconcentrated—but they now could be, notwithstanding the reduction in the number of opportunity districts.[254] Lastly, we cannot confidently predict how the parties would fare under the race-blind baseline when a nonpartisan actor was responsible for both the prior plan and its replacement. In this arrangement, it is uncertain to what degree minority voters (and Democrats) would have been packed by the prior plan or would be unpacked by the new district lines.[255]

Another factor that may affect the link between minority and partisan representation is the level of racial polarization in voting. This level varies significantly across the country. African American voters are a heavily Democratic constituency (supporting Democratic candidates at rates over 90%) in most areas.[256] But

252. *See* Stephanopoulos, *supra* note 24, at 1388-92 (analyzing state houses from 1972 to 2012). For similar (albeit nonempirical) conclusions by other scholars, see Cox & Holden, *supra* note 18, at 573, which explains that the optimal Democratic strategy is to create opportunity districts "with the thinnest margin[s] between Democrats and Republicans"; and Kenneth W. Shotts, *The Effect of Majority-Minority Mandates on Partisan Gerrymandering*, 45 AM. J. POL. SCI. 120, 121 (2001), which predicts based on a formal model that "where Democrats control redistricting," the tradeoff may not apply "because gerrymanderers can draw majority-minority districts with no excess Democratic votes."

253. *See* Stephanopoulos, *supra* note 24, at 1388-92.

254. Minority voters (and Democrats) could also be cracked—dispersed across multiple districts where they are unable to elect their preferred candidates.

255. We are also unable to make clear predictions about other scenarios under the race-blind baseline, like if the prior plan and the new one were both designed by Democrats (or by Republicans).

256. One of us previously calculated Black, Hispanic, and white partisan preferences, along with Black-white polarization and Hispanic-white polarization, by state and year over the 1972-2012 period. *See* Stephanopoulos, *supra* note 24, at 1354-59. We also estimated Black, Hispanic,

Hispanic voters range from moderately Democratic (in states like Florida and Georgia) to extremely Democratic (in states like Illinois and New York).[257] And white voters' partisan preferences fluctuate even more, from extremely Republican in the South to moderately Democratic in the Northeast.[258] Consequently, Black-white polarization is moderate in the Midwest and Northeast (where white voters are relatively evenly split between the parties) but severe in the South (where most white voters are Republicans).[259] Hispanic-white polarization is lower everywhere than Black-white polarization, though it too oscillates considerably (but less predictably) from one state to another.[260]

Different levels of racial polarization could amplify—or nullify—Democratic gains under the race-blind baseline. Consider a northeastern state where polarization is moderate because almost half of white voters typically back Democratic candidates.[261] If even a single opportunity district were dismantled in this electoral environment, the minority voters added to adjacent nonopportunity districts might tip several of them from Republican to Democratic control. These districts could be close to flipping already thanks to their divided electorates. In contrast, take a deep southern state where polarization is severe because white voters overwhelmingly support Republican candidates. If an opportunity district were eliminated in *this* environment, its minority voters might be submerged in nearby nonopportunity districts that would remain Republican even after becoming more diverse. *These* districts could be safe enough to begin with that they would not become competitive (let alone Democratic) due to the influx of minority voters.

A final factor that may shape the partisan consequences of the race-blind baseline is that benchmark's divergence from the status quo. In states where the

and white partisan preferences at the precinct level in 2012 through our ecological-inference analysis for this project. *See supra* notes 164-167 and accompanying text. For other important studies of racial polarization coming to similar conclusions as ours, see Amos & McDonald, *supra* note 165, at 8-10, which uses ecological-inference analysis to measure racial polarization at the congressional-district level; Ansolabehere et al., *supra* note 168, at 1413-24, which uses data from the 2008 primary and general elections to compare racial polarization in jurisdictions previously covered by section 5 of the VRA to jurisdictions not covered; and Zoltan L. Hajnal, *Who Loses in American Democracy? A Count of Votes Demonstrates the Limited Representation of African Americans*, 103 AM. POL. SCI. REV. 37, 44-46 (2009), which uses exit poll data to estimate racial polarization in a range of local and national elections.

257. *See* Stephanopoulos, *supra* note 24, at 1354-59.

258. *See id.*

259. *See, e.g.*, *id.* at 1358 fig.2.

260. *See, e.g.*, *id.*

261. We note that polarization varies *within* states as well as *between* them. Our hypotheses about how polarization affects Democratic gains under the race-blind baseline thus vary in tandem; they are not necessarily uniform statewide.

current number of opportunity districts is close to that which would usually arise from a nonracial redistricting process, we would not expect the race-blind baseline's adoption to have major partisan implications. It would not cause enough upheaval in the existing district map to alter significantly the parties' fortunes. By comparison, in states where there are considerably more (or fewer) opportunity districts than would generally emerge from the application of nonracial criteria, we would predict more substantial partisan effects from the race-blind baseline's use. Here, it *would* upend the current district configuration, enabling larger changes in the parties' relative positions.

B. Analysis

To test these hypotheses, one might think we could simply measure the partisan makeups of the maps we have already generated—their numbers of Democratic and Republican districts—and compare them to the status quo. The trouble with this strategy is that the maps were created without considering race *or* party. They are race-blind *and* party-blind. By themselves, accordingly, the maps cannot identify *only* the consequences of shifting from the prevailing understanding of section 2 to the race-blind baseline. They necessarily reveal the *combined* results of adopting the race-blind baseline and extracting partisanship from the redistricting process.[262]

This issue could be addressed in several ways.[263] The approach we employ here is to run a second set of simulations in which we instruct the algorithm to

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262. Of course, the same critique could be leveled against our earlier analysis of the simulated maps' implications for minority representation. *See supra* Part III. Perhaps, that is, we should have matched the enacted plans' nonpartisan *and* partisan characteristics—gerrymandering in favor of one party or another, protecting or targeting incumbents, enhancing or dampening competition, and so on. As noted above, we did not follow this approach because extreme partisan gerrymandering is itself unconstitutional (albeit nonjusticiable) and because no state actually includes partisan advantage as one of its redistricting criteria. *See supra* note 150. Additionally, the two-stage method we employ here is inapplicable to the issue of minority (as opposed to partisan) representation. After removing partisanship from the redistricting equation, but equaling the existing number of minority opportunity districts, we are left with that same number. It thus makes no difference whether we compare the volume of opportunity districts in the race-blind simulations to (1) that volume in the race-conscious simulations or (2) that volume in the enacted plan, because (1) and (2) are identical.

263. The main alternative to our approach is to *match* the partisanship of the enacted plan rather than to *remove* partisanship from the redistricting process. For example, if the enacted plan was passed by a unified Democratic government, maps could be generated that ignore race but try to benefit Democrats. The advantages of this method are that it requires just one stage and is able to probe the implications of the race-blind baseline when Democrats or Republicans are in charge of redistricting. Its glaring disadvantage is that if the partisanship of the enacted plan is actually matched, then by definition there is no partisan difference between it and the simulated maps.

equal the existing number of minority opportunity districts in each state-house plan.[264] This simulation set is therefore party-blind but *not* race-blind. We then compare the partisan effects of this second set to the partisan effects of the first one, which is party-blind *and* race-blind. The difference between these effects represents the partisan impact of the race-blind baseline. To state the logic of our two-stage method another way, the status quo in each state incorporates both partisan considerations and compliance with section 2 as currently construed. Next, the second simulation set removes partisanship but continues to follow the existing interpretation of section 2. Lastly, the first simulation set continues to exclude partisanship but switches to the race-blind baseline by removing race as a criterion. The only change from the second simulation set to the first one is thus the adoption of the race-blind baseline, since partisanship is constant (in that it is absent) in both sets.

The mechanics of the second simulation set are straightforward to describe (though harder to implement). Remember that our redistricting algorithm initially creates a seed map that performs at least as well as the enacted plan in terms of our specified criteria.[265] We did not include race as a parameter for the first simulation set, but we do for the second one: specifically, by programming the algorithm to accept changes that vary the number of opportunity districts—and to keep accepting them until these districts are as abundant as in the enacted plan. Once this target has been met, the seed map has been selected, and the MCMC process has begun, we also instruct the algorithm not to accept changes that would decrease or increase the number of opportunity districts. The reason this is easier said than done is that many enacted plans have gone to great lengths, making many sacrifices of traditional criteria, to create more opportunity districts.[266] Our algorithm thus often has to run for a long time to match the existing extent of minority representation in the seed map.[267]

Having produced both sets of simulated maps, we evaluate their partisan effects using the results of the 2012 presidential election. That is, we classify districts as Democratic (Republican) if Barack Obama (Mitt Romney) received more votes in them. The 2012 presidential election is the most recent one for

264. The existing numbers of African American and Hispanic opportunity districts are matched by the algorithm even if they are small—and even if the Black or Hispanic CVAP falls below the 10% threshold we used earlier. *See supra* notes 174-175 and accompanying text.

265. *See supra* note 154 and accompanying text.

266. This, of course, was our principal finding in Part III: in most states, there are more opportunity districts than would usually arise from the application of nonracial criteria.

267. In previous work, one of us has used the shortcut of simply *freezing* existing opportunity districts and then limiting the algorithm to areas of the state that are not fixed. *See* Chen & Rodden, *supra* note 13, at 336. Our approach here is more sophisticated and has also been used by one of us in litigation. *See* Chen *Whitford* Rpt., *supra* note 16, at 5-6.

which precinct-level data is universally available.[268] It was also a closely contested race, with a nationwide margin of victory of less than four points, making it a reasonable measure of districts' partisan leanings.[269] We note in passing that more sophisticated approaches to assessing district partisanship do exist. For example, districts could be scored probabilistically based on their likelihood of electing a Democratic or Republican candidate, not assigned categorically to a party.[270] Similarly, instead of using presidential-election results alone, they could be paired with legislative-election results, as well as incumbency information, to create a regression model.[271] Future work should certainly consider these approaches, though we doubt they would dramatically alter our conclusions.

Figure 14, then, displays the partisan breakdowns of both the enacted statehouse plans and the randomly generated maps in our *second* simulation set (the ones that match the enacted plans' volumes of opportunity districts). The red stars in the chart represent the proportions of Republican districts in the enacted plans. And the histograms indicate the distributions of Republican districts in the simulated maps.[272]

In about half the states, the median simulated map features fewer Republican districts than the enacted plan. In these states, the enacted plan is thus biased in a Republican direction compared to a redistricting process that ignores electoral data but satisfies traditional criteria and complies with the current understanding of the VRA. These pro-Republican skews are especially large in North Carolina (where the enacted plan includes ten more Republican seats out of 120 than the median simulated map), Georgia (seven extra Republican seats out of 180), and Virginia (four extra Republican seats out of 100). Essentially none of the simulations for these three states yields such lopsided outcomes in Republicans' favor.[273]

In most other states, in contrast, the median simulated map has a similar partisan makeup to the enacted plan. In Alabama, Arkansas, and Delaware, in

268. *See supra* note 167.

269. *See Federal Elections 2012: Election Results for the U.S. President, the U.S. Senate and the U.S. House of Representatives*, FED. ELECTION COMMISSION (July 2013), https://www.fec.gov/resources/cms-content/documents/2012pres.pdf [https://perma.cc/66JR-FUAE].

270. *See, e.g.*, Chen & Cottrell, *supra* note 119, at 333 (using this approach).

271. *See, e.g.*, Expert Report of Jowei Chen at 26-38, Common Cause v. Rucho, 279 F. Supp. 3d 587 (M.D.N.C.) (No. 1:16-CV-1026), *vacated*, 138 S. Ct. 2679 (2018) (mem.) (using this approach).

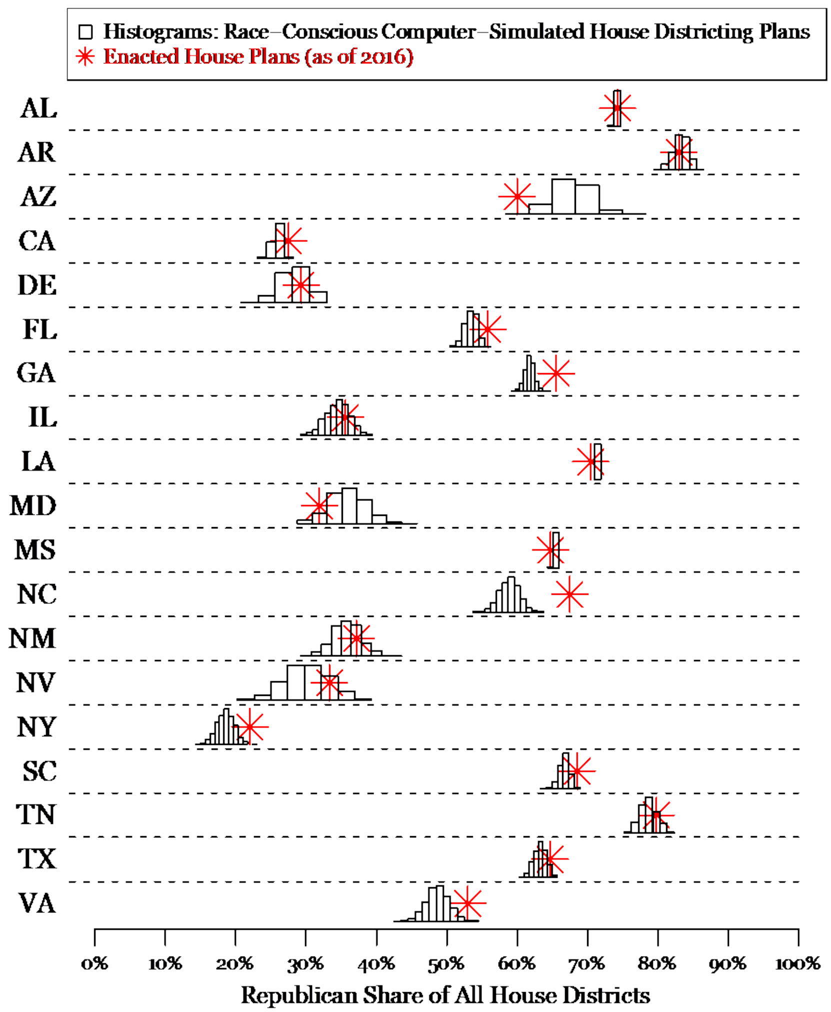
272. The appendix includes this information in tabular form as well. *See* Appendix C.

273. Literally none does for Georgia and North Carolina, while for Virginia, fewer than 1% of the race-conscious simulations give rise to at least as many Republican seats (fifty-three) as the enacted state-house plan.

fact, the median simulated map and the enacted plan have exactly the same numbers of Republican seats. Here, the enacted plan is virtually identical in its partisan implications to the usual product of a party-blind but race-conscious redistricting process. In only two states, Arizona and Maryland, is the enacted plan significantly tilted in a Democratic direction relative to these simulations. Arizona's enacted plan has twelve Democratic districts out of thirty while the median simulated map has just ten. Likewise, Maryland's enacted plan has thirty-two Democratic districts out of forty-seven while the median simulated map has just thirty.

FIGURE 14.

SHARES OF REPUBLICAN DISTRICTS IN ACTUAL AND SIMULATED RACE-CONSCIOUS STATE-HOUSE PLANS



Having removed partisanship as a parameter in the second simulation set, we can now compare that set to the first one, which ignores party *and* race. Again, this comparison is how we assess the partisan impact of the race-blind baseline. We examine the changes in simulated maps' partisan makeups from when they match enacted plans' numbers of opportunity districts to when they omit race as a criterion, holding constant the absence of any partisan motive. In Figure 15, accordingly, the blue histograms represent the distributions of Republican districts in the race-conscious simulated maps: the ones comprising the second simulation set, which equal states' current levels of minority representation. The gray histograms, in turn, indicate the distributions of Republican districts in the race-blind simulated maps: the ones comprising the first simulation set, which are generated through a nonracial redistricting process.[274]

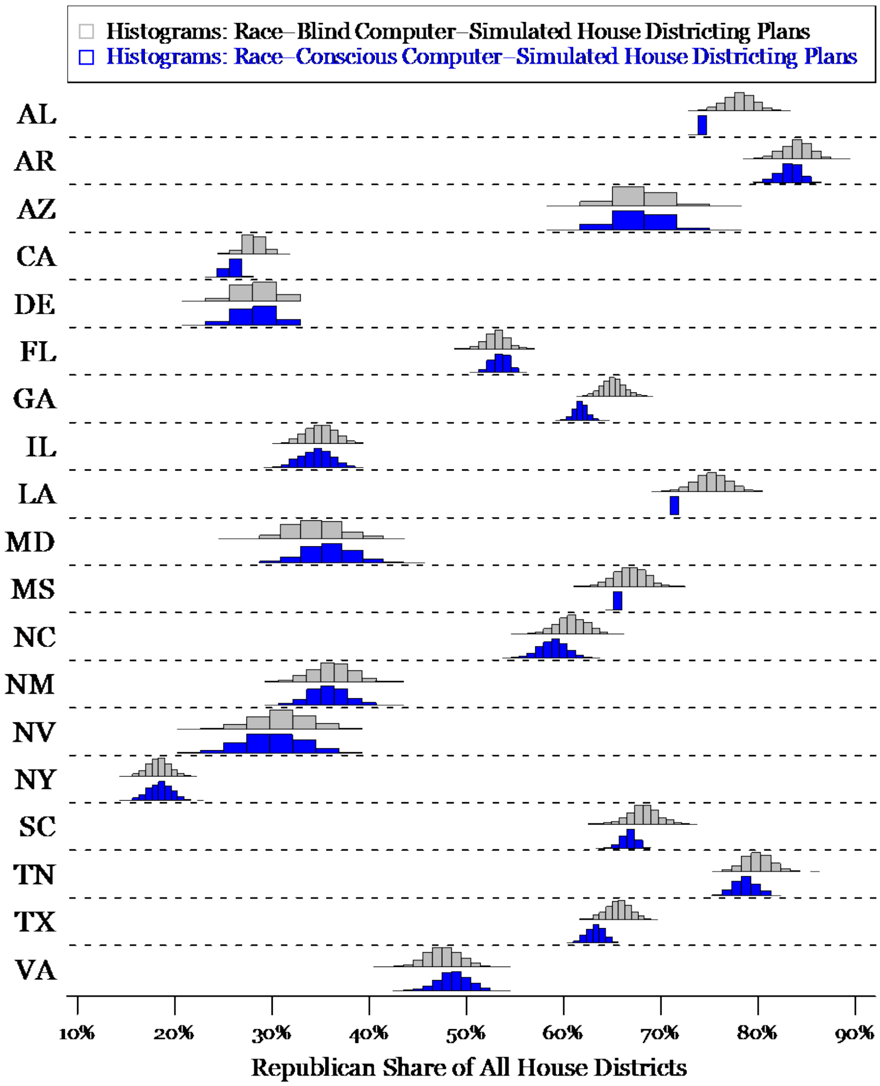
The chart's primary takeaway is the strong resemblance between the two sets of simulations. In most states, maps created without considering race have partisan breakdowns much like those of maps produced by matching enacted plans' volumes of opportunity districts. In seven states (Arizona, Delaware, Florida, Illinois, Nevada, New Mexico, and New York), the median race-blind map and the median race-conscious map contain precisely the same numbers of Republican seats. The partisan impact of the race-blind baseline is therefore trivial here. Neither party would be materially helped, or hindered, by switching from section 2's current interpretation to one that emphasizes the minority representation that would ensue from a nonracial redistricting process.

However, in a handful of deep southern states, the median race-blind map *is* quite different, in partisan terms, from the median race-conscious map. In Alabama, Georgia, Louisiana, and Texas, the median race-blind map features four to six more Republican seats than the median race-conscious map. Here, the partisan impact of the race-blind baseline is thus plainly pro-Republican. Republicans would win substantially more seats under a nonracial redistricting process than they would if the lines were drawn to equal existing levels of minority representation.[275]

274. The appendix includes this information in tabular form as well. *See* Appendix C.

275. In contrast, there is barely a hint of the race-blind baseline benefitting Democrats in any state. Only in Maryland and Virginia does the median race-blind map contain more Democratic seats than the median race-conscious map—and just one more seat at that. *See infra* Figure 15.

FIGURE 15.
SHARES OF REPUBLICAN DISTRICTS IN SIMULATED RACE-CONSCIOUS AND RACE-BLIND STATE-HOUSE PLANS



Lastly, recall the factors we previously mentioned that might modulate the partisan impact of the race-blind baseline: the partisanship of the redistricting authority, the extent of racial polarization in voting, and the race-blind baseline's divergence from the status quo.[276] Our research design does not allow us to investigate the first of these factors. Since we are comparing nonpartisan, race-conscious simulations to nonpartisan, race-blind simulations, we cannot analyze the electoral implications of a *partisan* redistricting authority like a unified Democratic or Republican government. But there is no such obstacle to examining the other two factors. Figure 16 thus contrasts (1) states with above-average racial polarization in voting with states with below-average polarization[277] and (2) states with relatively more or fewer opportunity districts, compared to the race-blind baseline, with states whose existing levels of minority representation are relatively closer to that benchmark.[278] For each group of states, Figure 16 displays a box plot of the difference in Republican seat share between the median maps in the second simulation set and the median maps in the first one. As above, these gaps are suggestive but fall well short of establishing causation.[279]

The first pairing reveals a difference between states with more and less racially polarized electorates.[280] Where polarization is higher, the partisan impact of the race-blind baseline is pro-Republican. In these states, the median race-blind map has a median of 1.7 percentage points more Republican seats than the median race-conscious map. Where polarization is lower, on the other hand, the race-blind baseline has no discernible partisan effect. In these states, the median race-blind map has a median of 0.0 percentage points more Republican seats than the median race-conscious map. The box plot also collapses into a single line because of the ubiquity of this zero value.

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276. *See supra* notes 252-261 and accompanying text.

277. We use our earlier ecological-inference estimates to calculate Black-white and Hispanic-white polarization in each state. *See supra* notes 164-167 and accompanying text. We then average Black-white and Hispanic-white polarization in each state, weighting them by the Black and Hispanic CVAPs.

278. This data is derived from Figures 11 and 12. For each state, we compute the absolute value of the difference in the share of opportunity districts between the enacted plan and the median race-blind simulated map. For the few states that have substantial African American *and* Hispanic populations, we add these differences for each minority group before calculating the absolute value of the sum. We then sort the states into two groups based on how different minority representation would be under the race-blind baseline compared to under the status quo.

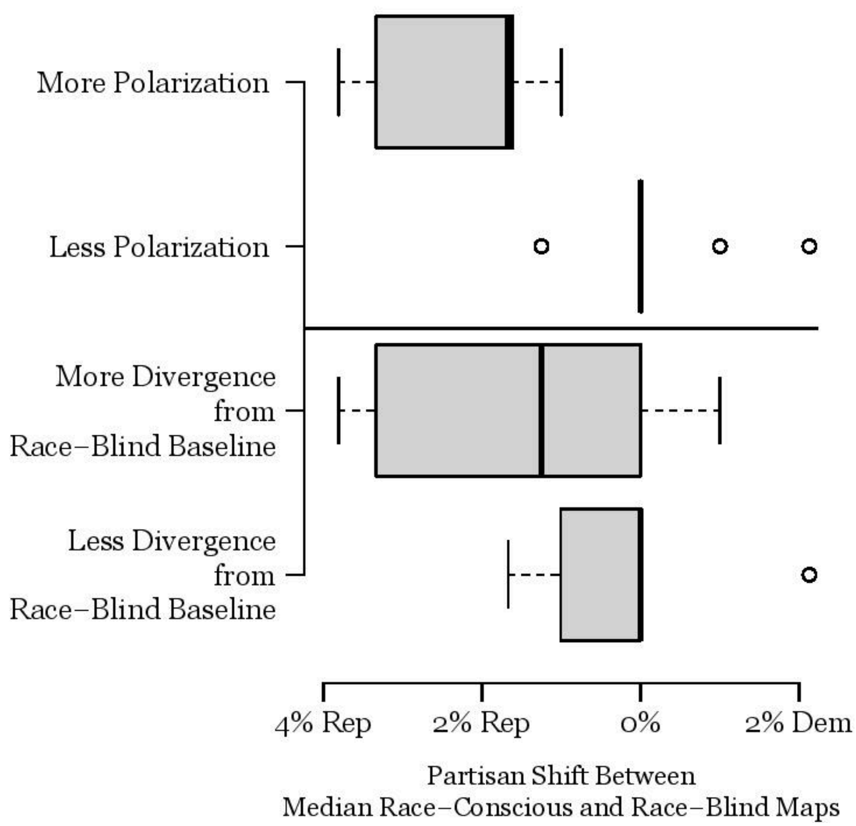
279. *See supra* Section III.B. And again, each box is bounded by the twenty-fifth- and seventy-fifth-percentile values and bisected by the median value. Each box's whiskers extend to the upper and lower adjacent values, and outliers beyond those values are displayed separately.

280. A Mann-Whitney *U* test indicates a difference in means at the 5% significance level ($z = 3.465$, $p = 0.0005$).

The second pairing further exposes a gap between states where the race-blind baseline diverges more and less from the status quo.[281] Where existing levels of minority representation would change more if district lines were drawn on nonracial grounds, the partisan impact of the race-blind baseline is pro-Republican. Here, the median race-blind map has a median of 1.3 percentage points more Republican seats than the median race-conscious map. But where current numbers of opportunity districts would vary less under the race-blind baseline, that benchmark has no noticeable partisan effect. Here, the median race-blind map has a median of 0.0 percentage points more Republican seats than the median race-conscious map.

FIGURE 16.

DIFFERENCES IN SHARES OF REPUBLICAN DISTRICTS BETWEEN MEDIAN SIMULATED RACE-CONSCIOUS AND RACE-BLIND STATE-HOUSE PLANS



281. A Mann-Whitney U test does not indicate a difference in means at conventional significance levels ($z = 1.138$, $p = 0.255$).

C. Discussion

An initial implication of our race-*conscious* simulations is unrelated to the race-*blind* baseline that is this Article's focus. This implication has to do, instead, with how enacted plans are compared to randomly generated maps in order to determine whether enacted plans are partisan outliers. To date, almost all such comparisons in the academic literature have ignored race.[282] Scholars have incorporated nonracial criteria like equal population, contiguity, compactness, and respect for county and municipal boundaries into their redistricting algorithms.[283] But they have almost never used racial and electoral data to ascertain which districts are minority opportunity districts and then to ensure that simulated maps include as many opportunity districts as do enacted plans. From most scholars' analyses, one might think that the VRA does not exist and that current law is agnostic as to how much representation minority voters receive.

At present, however, the VRA is a potentially binding redistricting requirement wherever substantial concentrations of minority voters exist. In all such areas, if a series of legal criteria is satisfied, the VRA mandates the creation of certain numbers of opportunity districts and imposes liability if these districts are not constructed.[284] The logic of the comparative exercise therefore demands that simulated maps be as compliant with the VRA as enacted plans. Remember the point of this exercise: to generate randomly many maps that achieve enacted plans' nonpartisan objectives while not seeking partisan advantage, and so to determine to what extent the pursuit of partisan gain explains enacted plans' partisan biases.[285] VRA compliance is a nonpartisan objective just like contiguity, compactness, respect for county and municipal boundaries, and so on. If anything, VRA compliance is *more* important than these traditional criteria because it is a universally applicable federal requirement, not a matter of mapmaker discretion. VRA compliance must thus be attained by simulated maps if they are to shed light on the reasons for enacted plans' partisan skews. Otherwise, enacted

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282. *See supra* notes 117-126. The only works that try to match states' existing numbers of opportunity districts are an article by one of us that froze Florida's opportunity districts and then randomly redistricted the rest of the state, *see* Chen & Rodden, *supra* note 13, at 336; a piece that assumed the VRA required at least the same minority concentrations currently contained by North Carolina's two most minority-heavy congressional districts, *see* Bangia et al., *supra* note 112, at 16; and a piece whose algorithm required two Virginia congressional districts to have Black Voting-Age Populations (BVAPs) above 40% and five Virginia Senate districts to have BVAPs above 50%, *see* DeFord & Duchin, *supra* note 125, at 128.

283. *See supra* notes 117-126.

284. *See supra* Part I (discussing current VRA doctrine).

285. *See supra* note 116 and accompanying text (discussing the logic of comparing enacted plans to randomly generated maps).

plans' defenders may claim—plausibly—that any skews relative to simulated maps are attributable to VRA compliance rather than to partisan intent.[286]

Since our race-conscious simulated maps *do* match enacted plans' numbers of opportunity districts, what do these simulations tell us about enacted plans' biases? For one thing, the simulations establish that the pro-Republican tilts of certain state-house plans enacted by unified Republican governments cannot be blamed on VRA compliance. Consider the Georgia, North Carolina, and Virginia plans that we flagged earlier.[287] These Republican-drawn plans[288] include between four and ten more Republican seats than the usual outcome of a redistricting process that ignores party but equals the existing volume of opportunity districts. The existing volume of opportunity districts is therefore perfectly consistent with significantly less distorted maps. It cannot justify these plans' marked pro-Republican skews.

This finding is not simply an interesting verdict on a few current plans; it also begins to challenge the conventional wisdom about the relationship between minority and partisan representation. The standard view, again, is that when many opportunity districts are crafted, Democrats are harmed statewide by the packing of minority Democrats in these districts.[289] The Georgia, North Carolina, and Virginia plans certainly contain many opportunity districts: fifty-two Black in Georgia's case, twenty-six Black in North Carolina's, and thirteen Black in Virginia's.[290] But notwithstanding all these opportunity districts, Democrats could perform reasonably well statewide if only the lines were drawn without partisan motives. In fact, they could win more than half the seats in Virginia, in

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286. This is exactly what certain enacted plans' defenders argued in litigation. *See, e.g.*, Defendants' Proposed Findings of Fact and Conclusions of Law at 59, Common Cause v. Rucho, 279 F. Supp. 3d 587 (M.D.N.C.) (No. 1:16-CV-1026), ECF No. 60, *vacated*, 138 S. Ct. 2679 (2018) (mem.) (noting that while North Carolina's enacted congressional plan "ensures compliance with the Voting Rights Act with ability-to-elect districts at 44.46% and 36.2%," in one expert's set of 24,000 simulated maps, "only 648 ha[d] at least one district at 43.81% or above and one district at 35.26% or above").

287. *See supra* note 273 and accompanying text.

288. As a technical matter, the Virginia plan was enacted by a divided state government. But the two chambers of the Virginia Legislature agreed that each chamber would design its own plan, and the Virginia House was under Republican control at the beginning of the 2010 redistricting cycle. The Virginia plan is thus more accurately treated as a Republican-drawn plan. *See Redistricting in Virginia After the 2010 Census*, BALLOTPEDIA, https://ballotpedia.org/Redistricting_in_Virginia_after_the_2010_census [https://perma.cc/6UNJ-ZMTR].

289. *See supra* notes 243-250 and accompanying text.

290. *See supra* Section III.B.

a competitive electoral environment like 2012's, without sacrificing any minority representation.[291]

Of course, the Georgia, North Carolina, and Virginia plans are unusual in being so pro-Republican compared to a party-blind but race-conscious redistricting process. Many of the plans in our dataset—including several enacted by unified state governments—have partisan breakdowns that arise frequently in our race-conscious simulations. For instance, the Arkansas, Delaware, and Illinois plans were all designed by Democrats, and the last of these was alleged in litigation to be an unlawful partisan gerrymander.[292] Yet the Arkansas and Delaware plans have precisely as many Democratic seats as the median race-conscious map, and the supposedly gerrymandered Illinois plan has one additional *Republican* seat. Likewise, several southern plans that were crafted by Republicans do not exhibit the pro-Republican biases of the Georgia, North Carolina, and Virginia plans. In Alabama, Louisiana, Mississippi, and Tennessee, there is no appreciable partisan difference between the enacted plan and the median race-conscious map. It is therefore not the case that partisan redistricting authorities always skew representation in favor of the line-drawing party. Quite often, they produce maps that could have been generated randomly by a computer algorithm concerned only with traditional criteria and VRA compliance.

A last point about our race-conscious simulations is that they regularly yield wide ranges of Democratic and Republican seats. There are anywhere from 35 to 46 Republican seats (out of 118) in the Illinois simulations, anywhere from 65 to 76 (out of 120) in the North Carolina simulations, anywhere from 22 to 34 (out of 150) in the New York simulations, anywhere from 43 to 54 (out of 100) in the Virginia simulations, and so on. These wide ranges further attenuate any connection between minority and partisan representation. In many states, the *same* number of opportunity districts can be drawn alongside several more or fewer Democratic or Republican districts. A given level of minority representation thus commonly conveys little information about how well (or poorly) each party is likely to be represented in a map. That same level could often be achieved by a map with a pro-Democratic or a pro-Republican tilt—or no partisan lean at all.

To this point, our discussion has been limited to our race-conscious simulations. We have not yet addressed how they compare, in their partisan consequences, to our earlier race-blind simulations. It is to that topic—our primary interest in this Part—that we now turn. To reiterate, our core finding here is that our race-conscious and race-blind simulations generally do *not* differ much in

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291. *See supra* Section IV.B. In contrast, the median race-conscious Georgia map includes only 69 Democratic seats, out of 180, in a 2012 electoral environment, and the median race-conscious North Carolina map includes only 50 Democratic seats, out of 120. *See* Appendix C.

292. *See* Radogno v. Ill. State Bd. of Elections, No. 1:11-cv-04884, 2011 WL 5868225, at *1 (N.D. Ill. Nov. 22, 2011).

their partisan effects.[293] In most states, the median race-conscious map includes about as many Republican seats as the median race-blind map. How can this be, given that the median race-blind map typically contains fewer opportunity districts than the median race-conscious map?[294] Per what we earlier called the simple hypothesis about the link between minority and partisan representation,[295] why do Democrats not benefit when some opportunity districts in the median race-conscious map disappear in the median race-blind map?

The answer involves the *kinds* of opportunity districts that emerge in our simulations. Again, they tend to be less minority-heavy than enacted opportunity districts.[296] When simulated opportunity districts have majorities of minority voters, these majorities are generally smaller than in enacted opportunity districts. Simulated opportunity districts are also more likely than enacted opportunity districts to be crossover districts where pluralities of minority voters ally with some white voters to elect minority-preferred candidates. As a result, simulated opportunity districts tend to be less disadvantageous for Democrats than enacted opportunity districts. They typically pack Democratic voters to a lesser extent. Sometimes, simulated opportunity districts are even optimal from a partisan Democratic perspective, enabling Democratic candidates to win reliably by relatively (but not overly) narrow margins. These bare-majority-minority and crossover districts maximize the cracking of *Republican* voters.

The reason why the median race-blind map is usually not more pro-Democratic than the median race-conscious map, then, is that the median race-conscious map is usually not very pro-Republican. Yes, the median race-conscious map usually has more opportunity districts than the median race-blind map. But these are not the opportunity districts of stereotype that massively overconcentrate Democratic voters. Rather, they are opportunity districts where Democratic candidates often win by reasonably (even highly) efficient margins. So when these opportunity districts are replaced by nonopportunity districts in the median race-blind map, it stands to reason that Democrats do not profit. Democrats are not handicapped by these opportunity districts in the first place. Their elimination thus gives Democrats no partisan edge.

293. *See supra* Section IV.B.

294. This, of course, was our core finding in Part III: a race-blind redistricting process typically yields fewer opportunity districts than exist in enacted plans.

295. *See supra* Section IV.A.

296. *See supra* Section III.B (discussing this finding for our race-blind simulations). The opportunity districts in our race-conscious simulations also tend to be less minority-heavy than enacted opportunity districts.

This result exposes the flaw in the conventional wisdom about the relationship between minority and partisan representation.[297] The conventional wisdom assumes that opportunity districts must contain large majorities of minority voters—and even more lopsided majorities of Democratic voters. This is why the construction of more opportunity districts is thought to harm Democrats: it packs them into a small number of districts while turning a larger number of adjacent districts more pro-Republican. But as our simulations show, the assumption that underpins the conventional wisdom is wrong. Opportunity districts need not contain supermajorities (or even majorities) of minority voters. They also need not be extremely safe for Democratic candidates. Indeed, many of our simulated opportunity districts are quite efficient Democratic districts, and most of them are more efficient than their corresponding enacted opportunity districts. And if the assumption underlying the conventional wisdom is incorrect, then so is the standard view of how minority and partisan representation are connected. Democrats are not necessarily hurt by the creation of more opportunity districts because these districts do not necessarily overconcentrate Democratic voters. By the same token, as we find here, Democrats do not necessarily *benefit* from the *elimination* of opportunity districts because these districts are not necessarily disadvantageous for them.

Not only are Democrats not guaranteed to profit from the dismantling of opportunity districts, but we further find that, in certain deep southern states, *Republicans* would gain a partisan edge under the race-blind baseline.[298] In Alabama, Georgia, Louisiana, and Texas, the median race-blind map, randomly generated without considering race, includes four to six more Republican seats than the median race-conscious map, which matches the existing number of opportunity districts.[299] To understand this result, it is necessary to return to the factors we tested earlier that influence the partisan impact of the race-blind baseline: the degree of racial polarization in voting and the race-blind baseline's divergence from the status quo.[300] Alabama, Georgia, Louisiana, and Texas share more than their deep southern location. Their electorates are also extremely racially polarized,[301] and their state-house plans contain considerably more

297. *See supra* Section IV.A.

298. *See supra* note 275 and accompanying text.

299. *See id.*

300. *See supra* notes 276-279 and accompanying text.

301. Using the method we described above, *see supra* note 277, these four states have a median weighted racial polarization of about 65%, compared to about 40% in the other states in our dataset.

opportunity districts than typically arise from a nonracial redistricting process.[302] These are exactly the indicators that are linked to a pro-Republican shift between the median race-conscious map and the median race-blind map: relatively higher racial polarization in voting and the disappearance of relatively more opportunity districts under the race-blind baseline.

To get a better sense of this dynamic, consider Alabama one last time. Its voters exhibit a staggering level of racial polarization; more than 80% of white voters are Republicans, while more than 90% of Black voters are Democrats.[303] If a Democratic opportunity district is eliminated in this electoral environment, it is highly likely that its voters will find themselves in Republican nonopportunity districts. The main other possibility—a Democratic district where Black voters are not numerous enough to elect their preferred candidate—is very difficult to construct under such polarized conditions.[304] Alabama's state-house plan also features four extra Black opportunity districts compared to the race-blind baseline.[305] So it is multiple opportunity districts, not just one, that vanish between the median race-conscious map and the median race-blind map. This is a significant amount of disruption that causes many voters to be relocated from Democratic opportunity districts into other districts. These other districts, of course, are mostly Republican nonopportunity districts: hence our finding that Alabama's median race-blind map has four more Republican seats than Alabama's median race-conscious map.[306]

We reiterate that our analysis keeps constant the identity of the redistricting authority. Both our race-conscious and race-blind simulations ignore electoral data much like a nonpartisan mapmaker might. We therefore cannot say what the partisan impact of the race-blind baseline would be if Democrats or Republicans were responsible for redistricting, or if control of the process switched between an earlier race-conscious and a later race-blind iteration. Nevertheless, at least when the identity of the mapmaker is fixed and nonpartisan, our results contradict the expectations of most observers. Democrats almost never benefit when the lines are drawn on nonracial grounds, even though a substantial number of existing opportunity districts disappear in these race-blind simulations. And when the race-blind baseline does have major partisan implications, it is Republicans who profit in racially polarized southern states, as multiple

302. These four states' plans have a median of about four percentage points more opportunity districts than under the race-blind baseline, compared to a median of about two percentage points more in the other states in our dataset. *See supra* Section III.B.

303. *See supra* notes 164-167 and accompanying text (discussing our use of ecological inference).

304. The other possibility in theory—a *Republican* opportunity district—does not exist in practice because minority voters in Alabama are heavily Democratic.

305. *See supra* Section III.A.

306. *See supra* note 275 and accompanying text.

Democratic opportunity districts are dismantled and their voters end up in Republican nonopportunity districts.

CONCLUSION

Avulsive change may soon be coming to the VRA. Prominent conservative judges and advocates have urged that section 2's proportionality baseline—under which minority voters' legislative representation is compared to their share of the population—be replaced by a race-blind baseline—under which minority voters' representation would be compared to the typical outcome of a nonracial redistricting process. The current Supreme Court, which has already restricted section 2 in other ways and demolished the VRA's other pillar, section 5, may well be attracted to this proposal. In this Article, we have deployed the powerful tool of randomized redistricting to explore the consequences that would follow if the race-blind baseline were adopted. In a nutshell, minority representation would decrease considerably since numerous existing opportunity districts, crafted to comply with the prevailing understanding of section 2, would vanish if the lines were generated using nonracial criteria. But contrary to the conventional wisdom, this reduction in minority representation would yield not a boost in Democratic representation but rather partisan stasis or even an occasional Republican edge. The new world of minority representation, under the race-blind baseline, would thus be quite different from the legal and political milieu we now inhabit. The new world of partisan representation, though, would be much the same.