Geographic Gerrymandering*

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The leading measures of gerrymandering reflect a party-centric theory of representation based on the statewide relationship between seats and votes. But electoral districting, a traditional practice that still predominates, reflects a geographic theory of representation focused on the district-based relationship between a representative and her constituents. We propose a new approach to gerrymandering that takes electoral districting on its own terms and defines fairness geographically without reference to the seats-votes relationship. Scholars, courts, and mapmakers recognize the representational interests advanced by geographic criteria, such as preservation of local political boundaries. We ask whether an electoral map fairly distributes these benefits. Under this approach, "geographic gerrymandering" occurs when a map unjustifiably distributes geographic impacts on the basis of race or party. This approach offers new methodological and conceptual possibilities, and a new way for courts to adjudicate gerrymandering claims that may avoid the justiciability problems the Supreme Court identified in Rucho v. Common Cause.[1] To demonstrate this approach in action, we analyze unnecessary county splits in congressional maps of the thirty-five states with four or more representatives. Overall, mapmakers differentially impose the burden of county splits on Black residents and Democrats. But the effect depends on who draws the lines. When a neutral actor draws the lines, the disparities disappear. When Democrats draw the lines, Black residents are slightly favored but Democrats are disfavored. When Republicans draw the lines, both Black residents and Democrats are significantly disfavored. And when both parties draw the lines, both Black residents and Democrats are disfavored even more. These results demonstrate the value of a geographic approach and suggest further research.

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[1] 139 S. Ct. 2484 (2019).

INTRODUCTION

In this Article, we offer a new way to conceptualize and measure fairness in geographic electoral districting. Most leading measures of partisan fairness focus on how an electoral map translates votes into seats, *i.e.* the statewide relationship between popularity and power that a map produces. By contrast, our approach focuses on the district-specific relationship between constituents and representatives that a map produces. We take seriously the premise that geographic electoral districting confers meaningful representational benefits. And we ask whether those benefits are fairly distributed. This inquiry produces geographic measures of partisan and racial gerrymandering that make no reference to electoral outcomes. Our approach offers new tools to academics, mapmakers, litigants, and courts in their efforts to study, avoid, challenge, and adjudicate the unfairness of gerrymandering.

This is an opportune time to think outside the seats-votes box. With the 2020 census process almost complete, the United States approaches a new decennial redistricting cycle at a dynamic moment in American politics generally and for districting reform in particular. The political moment is marked by increased partisan polarization, challenges to institutional norms, and pressure on our electoral systems.[2] The new era in districting reform is marked by the Supreme Court's recent announcement in *Rucho* that partisan gerrymandering, unlike malapportionment or racial gerrymandering, presents a nonjusticiable political question.[3] Closing the door to the federal

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[2] These challenges to our political and electoral systems are compounded by public health and economic crises and a national reckoning with race relations at a time of pronounced "conjoined polarization" defined by strong correlation between race and party. *See* Justin Levitt, *The List of COVID-19 Election Cases*, ELECTION L. BLOG (June 11, 2020, 5:34 PM), https://electionlawblog.org/?p=111962 [https://perma.cc/NC52-QGSQ] (identifying 335 COVID-19 election-related lawsuits in forty-five states, D.C., and Puerto Rico as of December 23, 2020); Bruce E. Cain & Emily R. Zhang, *Blurred Lines: Conjoined Polarization and Voting Rights*, 77 OHIO ST. L.J. 867, 869 (2016); Richard L. Hasen, *Race or Party, Race as Party, or Party All the Time: Three Uneasy Approaches to Conjoined Polarization in Redistricting and Voting Cases*, 59 WM. & MARY L. REV. 1837, 1840 (2018); Richard H. Pildes, *Participation and Polarization*, 22 U. PA. J. CONST. L. 341, 349 (2020); Richard L. Hasen, *Deep Fakes, Bots, and Siloed Justices: American Election Law in a "Post-Truth" World*, 64 ST. LOUIS L.J. 535, 539 (2020); Anthony J. Gaughan, *Illiberal Democracy: The Toxic Mix of Fake News, Hyperpolarization, and Partisan Election Administration*, 12 DUKE J. CONST. L. & PUB. POL'Y 57, 59 (2017); James A. Gardner, *Illiberalism and Authoritarianism in the American States*, 70 AM. UNIV. L. REV. 829, 863 (2021) (suggesting the term "polarization" may downplay the philosophical differences between the two major parties).

[3] *Rucho*, 139 S. Ct. at 2506.

courthouse left ajar three decades prior in *Davis v. Bandemer*,[4] the *Rucho* majority urged reformers to shift focus to state courts, direct democracy, and Congress.[5] Shortly thereafter, one of North Carolina's state courts struck down, on state law grounds, the same congressional map the Supreme Court upheld in *Rucho*.[6] The year prior, two more states adopted, via ballot initiative, independent commissions with primary redistricting authority, bringing the total to thirteen.[7] After regaining the House, Democrats passed an omnibus electoral reform bill that requires each state to draw its congressional map through an independent commission.[8] With the new round of decennial redistricting approaching, the movement for fair districts is robust, and gerrymandering is the focus of considerable attention, both scholarly[9] and popular.[10]

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[4] 478 U.S. 109, 125 (1986), abrogated by *Rucho*, 139 S. Ct. 2484 (2019).

[5] *Rucho*, 139 S. Ct. at 2499–2500, 2507–08.

[6] Common Cause v. Lewis, No. 18 CVS 014001, 2019 WL 4569584, at *2 (N.C. Super. Ct. Sept. 3, 2019); *see also* League of Women Voters v. Commonwealth, 178 A.3d 737, 821 (Pa. 2018) (striking down state's congressional map for violating guarantee in PA. CONST. art. I, § 5 that "elections shall be free and equal" and no power shall "interfere to prevent the free exercise of the right of suffrage"); League of Women Voters v. Detzner, 172 So. 3d 371 (Fla. 2015) (striking down state's congressional map for violating state's "Fair Districts Amendment," FLA. CONST. art. III, § 20(a), which provides that no districting plan "shall be drawn with the intent to favor or disfavor a political party").

[7] Colorado and Michigan adopted commissions to draw both congressional and state maps. *See* COLO. CONST. art. V, § 44; MICH. CONST. art. IV, § 6. Utah adopted an advisory commission. *See* UTAH CODE ANN. §§ 20A-20-101 – 303 (West 2021). Missouri created the office of state demographer in 2018 for its state legislative maps, which was later repealed in 2020. *See* MO. CONST. art. III, §§ 3, 7 (awaiting current legislation). Missouri uses a bipartisan commission for state maps, and the state legislature for congressional maps. *Id.*; *Id.* at § 45.

[8] For the People Act, H.R. 1, 116th Cong. §§ 2411–15 (2019). The House passed the bill, but the Senate did not consider it. 165 Cong. Rec. H2602 (daily ed. Mar. 8, 2019) (Roll Call Vote No. 118) (House vote: 234 to 193); 165 Cong. Rec. S1611 (daily ed. Mar. 4, 2019) (statement of Sen. McConnell) ("[O]f course, this sprawling, 622-page doorstop is never going to become law. I certainly don't plan to even bring it to the floor here in the Senate.").

[9] *See e.g.*, Jonathan N. Katz, Gary King & Elizabeth Rosenblatt, *Theoretical Foundations and Empirical Evaluations of Partisan Fairness in District-Based Democracies*, 114 AM. POL. SCI. REV. 164, 164 (2020) (recent public outrage, court challenges, and new legislation have led to "a resurgence of scholarly interest" in partisan gerrymandering); Michael S. Kang, *Hyperpartisan Gerrymandering*, 61 B.C. L. REV. 1379, 1380 (2020); Jacob Eisler, *Partisan Gerrymandering and the Constitutionalization of Statistics*, 68 EMORY L.J. 979, 1024 (2019) ("Given the recent prominence of partisan gerrymandering, it is unsurprising that it has received diverse scholarly attention.").

[10] *See e.g.*, Miles Parks, *Expert Warns of 'Real Festival of Partisan Gerrymandering' in 2021*, NPR (Apr. 29, 2020, 11:50 AM), https://www.npr.org/2020/04/19/836260800/expert-warns-of-real-festival-of-partisan-gerrymandering-in-2021 [https://perma.cc/7WVA-V4A5]. Efforts to educate and engage average citizens include Dave's Redistricting App, DistrictR, JudgeIt, Draw the Lines, PlanScore, and the Princeton Gerrymandering Project's new tool "Representable." DAVE'S REDISTRICTING, https://davesredistricting.org/maps#home [https://perma.cc/4NNG-894G]; Metric Geometry & Gerrymandering Grp., DISTRICTR, https://districtr.org/ [https://perma.cc/Y497-HFEY]; Andrew Gelman, Gary King & Andrew C. Thomas, *JudgeIt II: A Program for Evaluating Electoral Systems and Redistricting Plans*, GARY KING, https://gking.harvard.edu/judgeit [https://perma.cc/YU6H-YHL7]; DRAW THE LINES PA, https://drawthelinespa.org/ [https://perma.cc/327Z-2VXK]; *What is PlanScore?*, PLANSCORE https://planscore.org/about/ [https://perma.cc/YGC4-PNBH]; REPRESENTABLE, https://representable.org/ [https://perma.cc/D66A-QZBQ]; *see also* MICHAEL P. MCDONALD & MICAH ALTMAN, THE PUBLIC MAPPING PROJECT: HOW PUBLIC PARTICIPATION CAN

But fairness in electoral districting, while easy to support in theory, is hard to achieve in practice. Courts, mapmakers, and scholars have long struggled to identify objective, quantifiable measures of fairness—and its opposite, gerrymandering. In the 1960s, the Court imposed the quantitative constraint of substantial population equality,[11] but one-person-one-vote is necessary, not sufficient, for fair districts.[12] What's needed is a more general quantitative measure of fairness, one that assigns a map a "gerrymandering score" the way maximum population disparity assigns a map a "malapportionment score." If such a measure could be developed, courts could use it jurisprudentially to adjudicate partisan gerrymandering claims, reformers could use it legislatively to codify partisan fairness criteria in positive law (federal or state; constitutional or statutory), mapmakers could use it operationally to draw fairer maps, and academics could use it methodologically to measure and study gerrymandering. For these reasons, a definitive measure of partisan gerrymandering has long been the "holy grail,"[13] and adjudication of partisan gerrymandering claims has long been a dialectic between courts demanding and academics striving to provide quantitative measures of increasing sophistication.[14]

This dialectic has spurred a proliferation of such measures and techniques. Some of the leading ones include partisan bias,[15] the efficiency gap,[16]

REVOLUTIONIZE REDISTRICTING (2018). Retired Justice Stevens proposed a constitutional amendment to proscribe gerrymandering. JOHN PAUL STEVENS, SIX AMENDMENTS: HOW AND WHY WE SHOULD CHANGE THE CONSTITUTION (2014).

[11] Gray v. Sanders, 372 U.S. 368, 381 (1963); Wesberry v. Sanders, 376 U.S. 1, 7–8 (1964); Reynolds v. Sims, 377 U.S. 533, 560–61 (1964).

[12] As the Justices themselves soon acknowledged, mapmakers can draw extreme gerrymanders with perfect population equality. Wells v. Rockefeller, 394 U.S. 542, 551 (1969) (Harlan, J., dissenting) ("[T]he rule of absolute equality is perfectly compatible with 'gerrymandering' of the worst sort."); Fortson v. Dorsey, 379 U.S. 433, 439 (1965) (noting possibility that equipopulous multi-member districting scheme may "operate to minimize or cancel out the voting strength of racial or political elements of the voting population"); Bertrall Ross, *Partisan Gerrymandering, the First Amendment, and the Political Outsider*, 118 COLUM. L. REV. 2187, 2206 n.103 (2018) ("While equally apportioned legislative districts were necessary to satisfy the equal protection standard, they were not sufficient.").

[13] Daniel P. Tokaji, *Gerrymandering and Association*, 59 WM. & MARY L. REV. 2159, 2160 (2018) ("A legal standard for partisan gerrymandering is the holy grail of election law."); *see also* Sam Kean, *The Flaw in America's 'Holy Grail' Against Gerrymandering*, THE ATLANTIC (Jan. 26, 2018), https://www.theatlantic.com/science/archive/2018/01/efficiency-gap-gerrymandering/551492/ [https://perma.cc/4C84-ZD7U]; Whitford v. Gill, 218 F. Supp. 3d 837, 965 (W.D. Wis. 2016) (Griesbach, J., dissenting) ("Plaintiffs' claim that they had discovered the holy grail of election law jurisprudence—the long sought after 'judicially discernable and manageable standard' by which political gerrymander cases are to be decided.").

[14] *See* Eric McGhee, *Partisan Gerrymandering and Political Science*, 23 ANN. REV. POL. SCI. 171, 173 (2020).

[15] *See* Gary King & Robert X. Browning, *Democratic Representation and Partisan Bias in Congressional Elections*, 81 AM. POL. SCI. REV. 1251, 1251 (1987); Bernard Grofman & Gary King, *The Future of Partisan Symmetry as a Judicial Test for Partisan Gerrymandering after LU-LAC v. Perry*, 6 ELECTION L.J. 2, 3 (2007); Katz et al., *supra* note 9.

[16] *See* Eric McGhee, *Measuring Partisan Bias in Single-Member District Electoral Systems*, LEGIS. STUD. Q. 55, 55 (2014) [hereinafter McGhee, Measuring Partisan Bias]; Nicholas O. Stephanopoulos & Eric M. McGhee, *Partisan Gerrymandering and the Efficiency Gap*, 82 U. CHI. L. REV. 831, 834 (2015); Eric McGhee, *Measuring Efficiency in Redistricting*, 16 ELECTION L.J. 417, 418 (2017) [hereinafter McGhee, Measuring Efficiency in Redistricting]; Ben-

the declination,[17] the mean-median difference,[18] the lopsided-outcomes test,[19] and ensemble methods.[20] A fast-growing literature compares and contrasts them.[21] But they all share a party-centric conceptual foundation: they quantify how an electoral map allocates power to rival parties based on their popularity, and they define partisan gerrymandering as misallocation of party power. Under this approach, the relevant representational relationship is between voter and party, the relevant purpose of an electoral map is to translate votes into seats, and the relevant question is whether the map produces a fair seats-votes relationship.

In this Article, we offer a new approach that is different in kind. Our approach is based on geographic fairness rather than seats-votes fairness. Under this geographic approach, the relevant representational relationship is between a legislator and the territorial community she represents; the purpose of an electoral map is to facilitate that geographic district-based representational relationship; and the relevant question is whether the map fairly distributes the representational benefits of geographic electoral districting. Our approach accords with those of others who have endeavored to conceptualize and measure the representational benefits conferred by geographic electoral districting.[22] But while others have used this geographic framework to assess the absolute value of an electoral map, we ask whether the map distributes these benefits fairly across individuals and groups. A map that squanders the representational benefits that geographic electoral districting may confer represents bad policy. A map that unfairly distributes these benefits on the basis of party or race constitutes a partisan or racial gerrymander.

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jamin Plener Cover, *Quantifying Partisan Gerrymandering: An Evaluation of the Efficiency Gap Proposal*, 70 STAN. L. REV. 1131, 1167 (2018); Nicholas O. Stephanopoulos & Eric M. Mc-Ghee, *The Measure of a Metric: The Debate Over Quantifying Partisan Gerrymandering*, 70 STAN. L. REV. 1503, 1505 (2018); Ellen Veomett, *The Efficiency Gap, Voter Turnout, and the Efficiency Principle*, 17 ELECTION L.J. 249, 250 (2018).

[17] *See* Gregory S. Warrington, *Introduction to the Declination Function for Gerrymanders*, 1 (Mar. 13, 2018), https://arxiv.org/pdf/1803.04799.pdf [https://perma.cc/S7Y4-M5SW]; Gregory S. Warrington, *Quantifying Gerrymandering Using the Vote Distribution*, 17 ELEC-TION L.J. 39, 40 (2018); Marion Campisi, Andrea Padilla, Thomas Ratliff & Ellen Veomett, *Declination as a Metric to Detect Partisan Gerrymandering*, 18 ELECTION L.J. 371, 372 (2019).

[18] *See* Michael D. McDonald & Robin E. Best, *Unfair Partisan Gerrymanders in Politics and Law: A Diagnostic Applied to Six Cases*, 14 ELECTION L.J. 312, 312–13 (2015); Samuel S.-H. Wang, *Three Tests for Practical Evaluation of Partisan Gerrymandering*, 68 STAN. L. REV. 1263, 1304 (2016) [hereinafter Wang, Three Tests]; Samuel S.-H Wang, *Three Practical Tests for Gerrymandering: Application to Maryland and Wisconsin*, 15 ELECTION L.J. 367, 372 (2016) [hereinafter Wang, Three Tests Applied to Maryland and Wisconsin]; Jonathan Krasno, Daniel B. Magleby, Michael D. McDonald, Shawn Donahue & Robin E. Best, *Can Gerrymanders Be Detected? An Examination of Wisconsin's State Assembly*, 47 AM. POL. RSCH. 1162, 1164 (2019); McGhee, *Measuring Efficiency in Redistricting*, *supra* note 16, at 421; Katz et al., *supra* note 9, at 174 (showing that the mean-median difference is a valid estimator of "vote-denominated" partisan bias).

[19] Wang, *Three Tests*, *supra* note 18, at 1306; Wang, *Three Tests Applied to Maryland and Wisconsin*, *supra* note 18, at 376.

[20] *See infra* note 41.

[21] *See infra* note 43.

[22] *See infra* Sections I.A.1 and I.B.1.

We propose a straightforward three-step process. First, identify features of electoral maps that confer meaningful representational benefits, the significance of which is recognized by prevailing districting criteria, judicial precedent, and political science literature. Second, quantify the extent to which an electoral map confers such a representational benefit (or conversely, a burden) on a geographically identifiable individual or group. Third, assess whether a map differentially distributes this representational impact on the basis of a suspect characteristic like race or an expressive activity like party affiliation. Under this approach, unfairness occurs when a mapmaker unjustifiably distributes geographic representational impacts on the basis of race or party. We call such unfairness "geographic gerrymandering."

While many geographic features warrant consideration, we focus here on one of the most obvious: the preservation of county boundaries. Almost every state in the nation is partitioned into counties. Counties have remarkably stable boundaries and play an important role in organizing local political life. Before the reapportionment revolution, many states used counties as representational units for purposes of apportionment: counties were electoral districts; electoral lines were county lines. Today, electoral boundaries must sometimes depart from county boundaries to achieve population equality, but many mapmakers still try to limit the number of county splits. The United States Supreme Court has recognized the importance of county preservation, identifying it as one of the few valid justifications for some departure from population equality in state legislative maps, so long as this criterion is consistently applied.[23] 27 states explicitly codify a county preservation criterion for congressional districting.[24] 40 states explicitly codify a county preservation criterion for state legislative districting.[25] State courts sometimes strike down maps for splitting too many counties.[26] And the benefits of county preservation are well documented in the political science literature.[27] County splits confuse voters, frustrate electoral administration, and undermine the mobilization and representational efforts of voters, candidates, organizers, campaigns, and elected officials. In short, county preservation confers meaningful geographic representational benefits, and county splits impose meaningful geographic representational burdens.

Some burden is necessary because the command of population equality sometimes requires county splits. But some counties are subject to unnecessary splits—more splits than needed to achieve population equality.[28] Per-

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[23] This produces an anomaly: the mapmaker must apply this criterion consistently when the result departs from population equality but may apply this criterion inconsistently when the result comports with population equality.

[24] Yunsieg Kim & Jowei Chen, *Gerrymandered by Definition: The Distortion of "Traditional" Districting Criteria and a Proposal for Their Empirical Redefinition*, 2021 Wis. L. Rev. 101, 150 (2021) (Table 2).

[25] *Id.* at 149 (Table 1).

[26] *See infra* note 87 and accompanying text.

[27] *See infra* Section II.A.2.

[28] For the technical definition of an extra county split, s*ee infra* notes 175–80 and accompanying text.

haps some unnecessary splits are justified to achieve other legitimate districting goals. But is the burden of unnecessary county splits fairly distributed? To answer this question, we examine the congressional maps of the thirty-five states with four or more congressional districts. The maps account for 2,598 of the country's 3,143 counties, and 292.1 million of the country's 328.2 million residents.[29] We consider the race and party affiliation of county residents, based on the 2010 census demographic figures and the two preceding (2004 and 2008) presidential election results. We also categorize each map by who drew the lines: Democrats, Republicans, both parties, or an independent body.[30]

We find the burden of unnecessary county splits is both significant and non-uniform. A slight majority (154.8 million, *i.e.*, 53%) of people in the states considered live in a county subject to a least one unnecessary split, which we refer to as a *fractured* county.[31] But the likelihood of living in such a county depends on both race and party. And the magnitude and statistical significance of the racial and partisan disparities depend on who drew the lines. About 51% of White residents live in an unnecessarily split county. But about 61% of Black residents live in an unnecessarily split county. Thus, Black residents are subject to a 20% higher risk than White residents of living in an unnecessarily split county. Similarly, counties subject to more unnecessary splits are relatively less White and more Black—in a nation where the mean county is 86% White and 9.1% Black,[32] the average county with no extra split is similarly 86% White and 10% Black; the average county with one extra split, however, is 82% White and 13% Black; and the average county with multiple extra splits is 77% White and 15% Black. The mean number of extra splits is 0.10 for the Whitest counties (at least 90% White), 0.29 for less White counties (80% to 89.8%), and 0.33 for the least White counties (70% to 79.8%). In other words, for the least White counties, for every county with an extra split, about two others had no extra split; but for the Whitest counties, for every county with an extra split, about nine others had no extra split.

The extent and statistical significance of these racial disparities depend critically on who draws the lines. When independent bodies draw the lines, Black residents are slightly (5%) more likely to live in a fractured county; when Democrats draw the lines, Black residents are slightly (4%) less likely to live in a fractured county; and either disparity may be due to chance. But when Republicans draw the lines, Black residents are 25% more likely to live in a fractured county, to a high degree of statistical significance, with about 56% of Black residents but only 45% of White residents in a fractured

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[29] *County Population Totals: 2010–2019: Annual Estimates of the Resident Population for Counties: April 1, 2010 to July 1, 2019*, U.S. Census Bureau (March 2020), https://www.census.gov/data/tables/time-series/demo/popest/2010s-counties-total.html [https://perma.cc/W6JV-GMN7] [hereinafter *County Population Totals: 2010–2019*].

[30] *See infra* note 193 and accompanying text.

[31] *See* table, *infra* Subsection II.B.1.

[32] Mean calculated from U.S. Census data from all U.S. counties and county equivalents. *County Population Totals: 2010–2019*, *supra* note 29.

county. And when both parties draw the lines, Black residents are 43% more likely to live in a fractured county, to an extreme degree of statistical significance, with over 70% of Black residents but only 49% of White residents in a fractured county. Similarly, counties with large (over 25%) Black populations are subject to slightly fewer extra splits than counties with small (under 25%) Black populations when Democrats draw the lines, slightly more extra splits when Republicans draw the lines, but more than eight times as many extra splits when both parties draw the lines.

A similar story emerges in terms of party. When one party controls the districting process, a county is generally subject to more extra splits as its proportion of "out-party supporters" increases: counties with no extra splits are 41.2% out-party supporters on average, while counties with at least three extra splits are 48.5% out-party supporters on average. But the burden of extra county splits is imposed more on Democrats specifically than the out-party more generally. The bluer the county, the more extra splits: the average Democratic vote is 39.8% in counties with no extra splits; 45.6% in counties with one extra split; 53.7% in counties with two extra splits; and 55.8% in counties with three or more extra splits. Democrats are subject to more extra county splits whether the lines are drawn by the Republicans, the Democrats, or both parties, but the disparity is most pronounced when both parties draw the lines. Only when independent bodies draw the lines is there no statistically significant disparity. Similarly, Democratic strongholds (more than 70% Democratic vote) are subject to more extra splits on average than Republican strongholds (more than 70% Republican vote), whether the lines are drawn by the Republicans, the Democrats, or both parties. The disparity is most pronounced when both parties draw the lines, in which case Republican strongholds are subject to no extra splits while the mean extra split for Democratic strongholds is greater than one. Again, there is no statistically significant disparity only when an independent body draw the lines.

In short, the burden of extra county splits falls disproportionately on Black residents and Democrats. The racial disparity disfavoring Black residents is significant overall, greater when Republicans draw the lines, greatest when both parties draw the lines, slightly reversed when Democrats draw the lines, and nonexistent when an independent body draws the lines. The partisan disparity disfavoring Democrats is significant overall, marked when Democrats themselves draw the lines, greater when Republicans draw the lines, greatest when both parties draw the lines, and nonexistent when an independent body draws the lines. Neutral districting imposes no geographic unfairness. Bipartisan gerrymandering imposes the greatest geographic unfairness, disproportionally burdening both Black residents and Democrats. Democrats pursue partisan seats-votes advantage by imposing disproportionate county splits on Democrats, but not on Black Americans. Republicans pursue partisan seats-votes advantage by imposing disproportionate county splits on both Democrats and Black Americans.

These results suggest additional research questions that we encourage others, and hope ourselves, to explore in the future. The objective of this

Article is to present the general concept of geographic gerrymandering and to demonstrate how and why this approach matters. We do not suggest that we have discovered the "holy grail" of gerrymandering measures, *i.e.*, that which reduces to a unique real number anything worth knowing about an electoral map. We do not think such a measure exists, because fairness in electoral districting implicates multiple values and considerations. Indeed, our approach is based on the notion that districting is dual, simultaneously implicating two sets of representational interests, one statewide and party-centric, the other district-specific and geographic. Our central claim is more modest: that this geographic approach provides sufficient insight that its in-clusion in the methodological toolkit would offer value added to litigants, jurists, policymakers, academics, and citizens in their efforts to conceptual-ize, quantify, understand, and curb gerrymandering. The geographic ap-proach complements the seats-votes approach. Together, they offer a fuller picture of the representational interests at play.

The Article proceeds in three parts. Part I presents the theory of the geographic approach. While the seats-votes approach resists the geographic theory of representation underlying electoral districting, the geographic ap-proach embraces it as the basis for a fairness principle. By taking seriously the representational benefits of electoral districting, the geographic approach facilitates judicial intervention and justiciability. Specifically, *Rucho* is best read narrowly to foreclose only partisan gerrymandering claims based on the seats-votes framework, leaving the federal courts open to gerrymandering claims based on geographic fairness. Under this reasoning, the Court could strike down an electoral map as a "geographic" partisan gerrymander without overruling *Rucho*, and without relying on a seats-votes theory when adjudi-cating liability or crafting relief. But even if *Rucho* is read broadly to foreclose the geographic claim we propose, a geographic approach may still help liti-gants and jurists in state courts adjudicating gerrymandering claims under state constitutional provisions. Beyond the courtroom, the geographic ap-proach offers value to scholars, with new conceptual insights and method-ological possibilities. An electoral map often reflects a trade-off between different types of fairness. As our empirical study suggests, the mapmaker may pursue seats-votes fairness by burdening the geographic representational interests of Democrats and racial minorities.

Part II applies this geographic theory by examining how electoral maps split counties. Part II.A explains why county splits matter. First, it traces the historical development of the American county, its significance in political life, and its role in electoral districting. It then reviews the political science literature confirming the representational benefits of county preservation, and the representational burdens of county splits. Part II.B presents an anal-ysis of unnecessary county splits of the congressional maps drawn by each state with four or more districts following the 2010 census. A majority of residents live in a county subject to at least one extra split. But this burden is not borne equally. It falls disproportionately on Black residents and Demo-crats. When independent bodies draw the lines, these disparities disappear.

But they are significant when lawmakers draw the lines, particularly when the mapmaking process is controlled by Republicans or both parties. Notably, both Democrats and Republicans tend to disproportionately split blue counties. And the bipartisan gerrymanders produced by split legislative control impose the most significant disparities, both racial and partisan.

Part III concludes with a summary of the implications of our conceptual proposal and empirical findings for scholars, mapmakers, and courts.

I. Theory: Reconceptualizing Gerrymandering As Geographic Unfairness

Efforts to measure gerrymandering are generally party-centric. They quantify how an electoral map translates party popularity into power. And they define a partisan gerrymander as a map that gives one party more power than its popularity warrants. This framework operates within a "seats-votes" box—literally. Analysts conceptualize "seats-votes space" as the unit square in the first quadrant of the x-y plane, with horizontal and vertical axes respectively denoting a party's statewide vote share and statewide seat share.[33] Each dot in the box represents an (observed or hypothetical) electoral outcome: in the NE and SW corners, one party wins all the seats with all the votes; in the center of the box, the two rival parties equally split both votes and seats. As vote share shifts, these electoral outcomes trace out a smooth "seats-votes" curve. Under this party-centric approach, the gravamen of a gerrymandering claim is that the challenged map produces an unfair seats-votes curve, one that allocates to one party more power than it deserves. In recent decades, this seats-votes conceptualization has dominated the academic debate about how to measure fairness in electoral districting, the popular debate about how to draw fair maps, and the judicial debate about whether and how to curb partisan gerrymandering.

The seats-votes framework has played such a dominant role because it so powerfully captures why mapmakers gerrymander, why gerrymanders offend prevailing norms of fairness, and why gerrymandering distorts the operation of representative democracy. Consider the North Carolina congressional map before the Court in *Rucho*. That map was the product of the sort of extreme hyperpartisan mapmaking process that has come to characterize redistricting in many states. It was approved on a party-line vote by a joint redistricting committee with a supermajority of Republican legislators, co-chaired by Representative David Lewis, who explicitly supported "drawing the map to give a partisan advantage to 10 Republicans and 3 Democrats" because he "[did] not believe it possible to draw a map with 11

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[33] Technically, the relevant quantity in the general case of differential voter turnout is average district vote share, which is equal to statewide vote share under uniform voter turnout. *See* Katz et al., *supra* note 9, at 165.

Republicans and 2 Democrats."[34] This map, and its predecessor, operated precisely as intended, giving Republicans supermajority seat share with a slim majority of vote share (ten of thirteen seats or about 77% seat share, with 55% of the vote in 2014 and 52% in 2016), or even a minority of vote share (nine of thirteen seats or 69% seat share, with 49% vote share). And that is precisely why so many consider it unfair: a map violates an intuitive and widely shared principle of equality when it permits one party, but not the other, to translate 49% vote share into 69% seat share or 52% vote share into 77% seat share.[35] The critique reflects a simple premise: a party's strength in the legislature should reflect its popularity with the electorate; partisan gerrymandering is unfair because it misallocates seats to parties.

Translating this intuition into a rigorous analytical approach, the seats-votes framework makes explicit the understanding that an electoral map is fundamentally a device that converts input into output, popularity into power, vote share into seat share. McGhee has proposed what he calls the efficiency principle: Any measure of efficiency must indicate a greater advan-

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[34] Common Cause v. Rucho, 318 F. Supp. 3d 777, 808 (M.D.N.C. 2018). Representative Lewis further explained: "I think electing Republicans is better than electing Democrats. So I drew this map to help foster what I think is better for the country." *Id.* at 809. After the desired map had already been designed, the committee met for the first time, and explicitly approved, on a party-line vote, a "Partisan Advantage" criterion, promising "reasonable efforts . . . to maintain the current partisan makeup." *Id.* at 807, 880. That makeup was achieved by a previous map, ultimately struck down as a racial gerrymander, drawn after Republicans captured both legislative chambers (and thus the districting process) for the first time in more than a century, pursuant to explicit instructions to "create as many districts as possible in which GOP candidates would be able to successfully compete for office." *Id.* at 803, 880. Both maps were designed by Republican operative Dr. Thomas Hofeller, who had previously served as redistricting coordinator for the Republican National Committee and concurrently worked on a "redistricting team" established by REDMAP, the Republican State Leadership Committee's Redistricting Majority Project. REDMAP was established to "strengthen Republican redistricting power by flipping [state legislatures] from Democrat to Republican control" and thereby "maintain a Republican stronghold in the U.S. House of Representative for the next decade." *Id.* at 803, 880. Hofeller, known as the "Michelangelo of gerrymandering," would subsequently play an instrumental role in recent efforts to add a citizenship question to the 2020 Census, which he predicted would ultimately benefit both Whites and Republicans. Michael Wines, *Deceased G.O.P. Strategist's Hard Drives Reveal New Details on the Census Citizenship Question*, N.Y. Times (May 30, 2019), https://www.nytimes.com/2019/05/30/us/census-citizenship-question-hofeller.html [https://perma.cc/CQZ2-8FSJ].

[35] Other alleged gerrymanders are attacked for precisely the same reason: turning too little vote share into too much seat share: the congressional map challenged in *Davis v. Bandemer* turned 48.1% vote share into 57% seat share, Davis v. Bandemer, 478 U.S. 109, 134 (1986) (plurality opinion); the congressional map challenged in *Vieth* turned 49.4% vote share into 68.4% seat share, Vieth v. Pennsylvania, 188 F. Supp. 2d 532, 536 (M.D. Pa. 2002); the congressional map challenged in *Gill v. Whitford* turned 52% vote share into 63% seat share, Gill v. Whitford, 138 S. Ct. 1916, 1923 (2018); the congressional map challenged in *League of Women Voters v. Commonwealth* turned 54.1% vote share into 72.2% seat share, League of Women Voters v. Commonwealth, 178 A.3d 737, 764 (Pa. 2018); the legislative map challenged in *League of Women Votes of Michigan v. Benson* turned 50.4% vote share into 71.1% seat share, League of Women Voters v. Benson, 373 F. Supp. 3d 867, 892 (E.D. Mich. 2019); and the congressional map challenged in *Householder* turned a range of 51% to 59% vote share to a 75% seat share between 2012 and 2018, Ohio A. Philip Randolph Inst. v. Householder, 373 F. Supp. 3d 978, 1155 (S.D. Ohio 2019).

tage for (against) a party when the seat share for that party increases (decreases) without any corresponding increase (decrease) in its vote share.[36] Cover has demonstrated that any measure satisfying this principle is equivalent to a seats-votes curve.[37] For example, the efficiency gap, a leading measure developed by McGhee and Stephanopoulos,[38] is equivalent to an ideal seats-votes curve that is a straight line passing through the equal split point $(V,S) = (0.5, 0.5)$ with a slope of two.[39] Other leading measures, including partisan symmetry, the mean-median difference, and the declination, similarly conceptualize fairness in terms of seats and votes.[40]

The cutting-edge of the seats-votes approach is recent work that uses politics-blind algorithms to produce a large ensemble of maps that satisfy neutral criteria like contiguity, compactness, and population equality.[41] We can predict how many seats each party wins under each hypothetical map and aggregate these outcomes into a probability density function for the entire ensemble. The result is a bell curve indicating the likelihood of various seat allocations under neutral mapmaking. We can then check whether the seat allocation produced by the enacted map is an extreme outlier compared to this probability curve. In *Rucho*, an expert witness used this method and concluded that the 10-3 partisan advantage produced by Hofeller's map favored Republicans more than over 99% of the almost 25,000 maps drawn by a neutral algorithm.[42]

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[36] Cover, *supra* note 16, at 1167 n.127. The measure simply reports the extent to which an electoral outcome (a point) lies above (or below) some ideal seat-vote relationship (a curve).

[37] *See id.*

[38] The efficiency gap is designed to measure relative "wasted votes," where a vote is wasted when it is cast for a losing candidate (lost vote) or for a victorious candidate who would have won anyway (surplus or excess vote). *See* Stephanopoulos & McGhee, *supra* note 16, at 851.

[39] As originally defined, this equivalence requires the simplifying assumption that R-won and D-won districts have the same average turnout. Cover, *supra* note 16, at 1156; Veomett, *supra* note 16, at 261. But McGhee subsequently proposed a modified definition based on average district turnout, which guarantees this equivalence in all cases. *See* McGhee, *Measuring Partisan Bias, supra* note 16, at 1522.

[40] The declination is defined in terms of a related analytical framework called a rank-vote curve. Like seats-votes space, rank-vote space is the unit square in the positive quadrant with the vertical axis measuring one party's vote share. But rank-vote space arranges electoral districts in ascending order of one party's vote share and uses the horizontal axis to indicate a district's rank in that ordered sequence. Cover has demonstrated that interpolation methods can be used to draw a smooth, monotonically increasing rank-vote curve through these points, and leading measures of partisan gerrymandering correspond to various aspects of this rank-vote curve. Benjamin Plener Cover, Gerrymandering as Jerk: Measuring Partisan Fairness Using a Rank-Vote Curve (unpublished manuscript) (on file with author); *see* John F. Nagle & Alec Ramsay, *On Measuring Two-Party Partisan Bias in Unbalanced States* (2020), https://arxiv.org/pdf/2006.14067.pdf [https://perma.cc/Y9SL-CEBF] (demonstrating how other measures correspond to properties of rank-vote and seat-vote curves).

[41] Jowei Chen & Jonathan Rodden, *Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures*, 8 Q.J. POL. SCI. 239 (2013); Andrew Chin, Gregory Herschlag & Jonathan Mattingly, *The Signature of Gerrymandering in* Rucho v. Common Cause, 70 S.C. L. REV. 1241 (2019).

[42] Rucho v. Common Cause, 139 S. Ct. 2484 (2019) (citing *Rucho*, 318 F. Supp. 3d at 893-894) ("Over 99% of that expert's 24,518 simulations would have led to the election of at least one more Democrat, and over 70% would have led to two or three more."); *see also League*

A fast-growing literature compares and contrasts these alternative measures and techniques.[43] But this rich debate is taking place internal to the seats-votes framework, asking which seats-votes measure is best, or whether any is good enough, rather than whether to operate within or outside the "seats-votes box." This proliferation of seats-votes measures and techniques reflects a dialectic between courts demanding and academics striving to provide quantitative measures of increasing sophistication. Justice Kennedy flirted with, but never embraced, an approach based on partisan symmetry.[44] The three-judge panel ultimately reversed by the Supreme Court in *Gill v. Whitford* relied on the efficiency gap.[45] The three-judge panel that invalidated the North Carolina congressional map at issue in *Rucho* referred to multiple seats-votes measures.[46] In her *Rucho* dissent, Justice Kagan favored ensemble techniques.[47] Every jurist eschewed a requirement of strict proportionality, and skeptics of judicial intervention warned that any seats-votes approach would ultimately boil down to such a requirement.[48] Justice Roberts dismissed these various seats-votes measures as "sociological gobbledygook,"[49] and, writing for the *Rucho* majority, concluded that none of them offered a judicially discernible and manageable standard adequate to support federal court adjudication of partisan gerrymandering claims.[50] As action has

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of Women Voters, 178 A.3d at 776 (Pa. 2018) (Of "1 trillion computer-generated [maps] . . . , 99.999999% of them had less partisan bias than [Pennsylvania's 2011 congressional map].").

[43] Nagle & Ramsay, *supra* note 39; Katz et al., *supra* note 9; Gregory S. Warrington, *A Comparison of Partisan-Gerrymandering Measures*, 18 ELECTION L.J. 262 (2019); *see generally* Stephanopoulos & McGhee, *supra* note 16.

[44] *See* Vieth v. Jubelirer, 541 U.S. 267, 316–17 (2004) (Kennedy, J., concurring) (concluding that partisan symmetry means if the parties switched vote shares, their seat shares should switch too). Formally, it means that for any value of vote share V ? 0, 1, the following equation applies: SV= 1- S(1-V). Visually, it means the seats-votes curve need not lie on the diagonal line of strict proportionality, SV= V, but it should be symmetric about this line. Associated with this principle is a measure of partisan gerrymandering, called partisan bias and denoted â(V), that quantifies the extent of deviation from partisan symmetry. Formally, partisan bias is defined as V=&SV-[1- S1- V]}/2. Its sign indicates which party the map favors, and its magnitude indicates how much seat share the parties would have to swap to achieve partisan symmetry. Often this measure is evaluated at equal vote share V=0.5, in which case it simply indicates how far above (or below) the seat-vote curve passes the equal split point V,S=0.5,0.5. *See* Katz et al., *supra* note 9, at 165–166; Anthony J. McGann, Charles A. Smith, Michael Latner & Alex Keena, *A Discernable and Manageable Standard for Partisan Gerrymandering*, 14 ELECTION L.J. 295 (2015); Grofman & King, *supra* note 15.

[45] *See* Whitford v. Gill, 218 F. Supp. 3d 837, 910 (W.D. Wis. 2016).

[46] Common Cause v. Rucho, 279 F. Supp. 3d 587, 658 (M.D.N.C. 2018) (discussing testimony of expert Dr. Simon Jackson, who analyzed the map using the efficiency gap, partisan bias, and the mean-median difference).

[47] *Rucho*, 139 S. Ct. at 2519 (Kagan, J., dissenting).

[48] *Id.* at 2499; *id.* at 2515 (Kagan, J., dissenting); Davis v. Bandemer, 478 U.S. 109, 130 (1986) (plurality opinion); *id.* at 155 (O'Connor, J., concurring in the judgment); *id.* at 168 (Powell, J., dissenting); Vieth v. Jubelirer, 541 U.S. 267, 288 (2004); ; *id.* at 308 (Kennedy, J., concurring); *id.* at 338 (Stevens, J., dissenting); *id.* at 351–52 (Souter, J., dissenting); *id.* at 357–58 (Breyer, J., dissenting); League of United Latin Am. Citizens v. Perry, 548 U.S. 399, 419 (2006).

[49] Oral Argument at 35:21, Gill v. Whitford, 138 S. Ct. 1916 (2018) (No. 16-1161), https://www.oyez.org/cases/2017/16-1161 [https://perma.cc/3PZ6-H3H7].

[50] *See Rucho*, 139 S. Ct. at 2506–07.

recently shifted to state courts and ballot initiatives, these various seats-votes measures continue to play a leading role.[51] And the scholarly debate about the comparative strengths of alternative measures continues.

Our approach is different in kind. Whereas the seats-votes approach focuses on the statewide relationship between the electorate and the body of legislative representatives, the geographic approach focuses on the district-specific relationship between an individual representative and her geographically defined constituency. We do not dispute the power of the seats-votes approach. Nor do we claim that fairness in districting should be conceptualized in terms of geography *instead* of seats-votes. Rather, we suggest that fairness in districting should be analyzed *both* in seats-votes terms *and* geographic terms, and we argue that this dual conception of fairness offers benefits over an approach that focuses exclusively on seats-votes and ignores geography. There are conceptual, jurisprudential, and methodological advantages to an approach that complements the seats-votes framework with independent consideration of geographic fairness. The seats-votes framework is powerful because it gives laser focus to an important quantity of interest. But laser focus misses anything outside its narrowed field of vision. By thinking outside the seats-votes box, our geographic approach offers new insights and possibilities.

For many, the seats-votes approach may appear to fully capture the representational interests at stake in our system of geographic electoral districting with plurality voting. But this raises a fundamental question: why do we use this system in the first place? Note that this system involves two fundamental design choices that combine to enable gerrymandering: electoral formula and district magnitude.[52] Our predominant approach has been single-member geographic districts (one per representative) with a plurality voting rule (whoever gets the most district votes wins the district election). Of all the long-established democracies, the United States is one of the few that uses single-member districts to elect its national legislature.[53] Dozens of countries, including twenty-nine of the world's thirty-five major democra-

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[51] Mo. Const. art. III, § 3 ("Districts shall be drawn in a manner that achieves both partisan fairness and, secondarily, competitiveness . . . 'Partisan fairness' means that parties shall be able to translate their popular support into legislative representation with approximately equal efficiency . . . [T]he total number of wasted votes for each party, summing across all of the districts in the plan shall be calculated. 'Wasted votes' are votes cast for a losing candidate or for a winning candidate in excess of the threshold needed for victory. In any redistricting plan and map of the proposed districts, the difference between the two parties' total wasted votes, divided by the total votes cast for the two parties, shall not exceed fifteen percent.").

[52] John T. Ishiyama, Comparative Politics: Principles of Democracy and Democratization 159 (2011) (citing David M. Farrell, Electoral Systems: A Comparative Introduction (1st ed. 2001)) ("In general, we can think of electoral systems as being made up of a set of choices, which include: the electoral formula, the district magnitude, ballot structure, and electoral thresholds.").

[53] The others are Australia, Canada, France, and Great Britain. *See* Paul L. McKaskle, *Of Wasted Votes and No Influence: An Essay on Voting Systems in the United States*, 35 Hous. L. Rev. 1119, 1123 (1998).

cies, use alternative systems based on proportional representation.[54] Whereas geographic electoral districting indirectly produces a seats-votes curve, often deemed undesirable, proportional representation, by construction, awards each party seats based on its statewide vote share, and thereby directly establishes a specified relationship between seats and votes.[55] For example, the Netherlands elects its 150-member legislature with a single national voting district, so a party earns one seat for every 1/150 vote share.[56] With no electoral districts, there can be no gerrymandering, and no distortion of the seats-votes relationship.

So the question remains: if the only function of an election is to produce a fair allocation of power to rival parties, then why do we use geographic electoral districting at all? Why not simply adopt a proportional representation system designed to produce the desired votes-seats relationship?[57] If the only objective is the right votes-seats relationship, proportional

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[54] For this statistic, a "major democracy" is defined as a country with at least two million people and a 2012 Freedom House Average Freedom Ranking of one or two. *Electoral Systems Around the World*, FAIRVOTE, https://www.fairvote.org/research_electoralsystems_world [https://perma.cc/Z4WY-2ED8] ("Internationally, proportional representation is the most common type of electoral system with 89 of the 195 countries below using it."). *Electoral System Family*, INT'L INST. FOR DEMOCRACY & ELECTORAL ASSISTANCE, https://www.idea.int/data-tools/question-view/130357 [https://perma.cc/SBQ5-PU8S] (84 of 217 countries); Comparative Data, *What Is the Electoral System for Chamber 1 of the National Legislature? Mixed Member Proportional*, ACE PROJECT, http://aceproject.org/epic-en?question=es005&f=H [https://perma.cc/YRS2-WBX7] (86 of 234 countries). Countries using proportional representation include New Zealand, Japan, Israel, and every Western European country other than Great Britain and France. McKaskle, *supra* note 53, at 1123–24 & nn.15–17; *Alternative Voting Systems*, NAT'L CONF. STATE LEGISLATURES (June 25, 2020), https://www.ncsl.org/research/elections-and-campaigns/alternative-voting-systems.aspx [https://perma.cc/V4UP-BAEB] ("Party list forms of proportional representation [are] used by many countries throughout Africa, Asia, Australia, South America and Europe.").

[55] JAMES A. GARDNER & GUY-URIEL CHARLES, ELECTION LAW IN THE AMERICAN POLITICAL SYSTEM 33 (2d ed. 2017) ("Under PR, each party wins seats in the legislature in proportion to its popular electoral support."). That relationship could be strict proportionality, where each party's seats share is simply its vote share and the seats-votes curve is a straight line with slope one through the equal split point. *See* Adam Cox, Commentary, *Partisan Fairness and Redistricting Politics*, 79 N.Y.U. L. REV. 751, 765 (2004) ("[I]n [a pure proportional representation] system . . . by definition . . . the seats-votes relationship is linear."). The degree to which a system achieves strict proportionality depends on the number of seats, because intermediate seat share values must be rounded up and down. *See* McKaskle, *supra* note 53, at 1149. But the relationship could also be a looser form of proportionality that gives some seat bonus to a party that wins majority vote share and only awards seats to parties that achieve some threshold vote share. For example, Germany uses a party-list system where a party gets no seat unless it earns at least 5% vote share. *Id.* at 1150 n.127. A party can also earn a seat by winning at least three single-member constituency seats. *Id.*

[56] McKaskle, *supra* note 53, at 1150 n.127.

[57] Another alternative is the winner-take-all at-large system, which was used for congressional elections in many states in the nation's first half century. *See* Karcher v. Daggett, 462 U.S. 725, 745 & n.3 (1983) (Stevens, J., concurring); *Wesberry*, 376 U.S. at 8 n.11 (citing Joel Francis Paschal, *The House of Representatives: "Grand Depository of the Democratic Principle"?*, 17 L. & CONTEMP. PROBS. 276, 281 (1952)) ("As late as 1842, seven States still conducted congressional elections at large."). But at-large elections are worse than districted elections in terms of partisan fairness, because a party with just over half the votes captures all the seats. *See* Davis v. Bandemer, 478 U.S. 109, 159 (1986) (O'Connor, J., concurring in the judgment)

representation is a much more sensible way to achieve it than geographic electoral districting with maps constrained to indirectly produce what proportional representation directly provides. Political theorists have long favored proportional representation over geographic electoral districting for this reason.[58] In this sense, the seats-votes framework is in tension with the very idea of geographic electoral districting.[59] Its underlying theory of representation aligns better with a system of proportional representation than one of geographic electoral districting with plurality voting. Yet the American electoral system has long rejected the former and embraced the latter.

For this reason, the seats-votes approach is vulnerable to the critique that it imposes a norm inconsistent with our institutional commitments and that it would radically remake our electoral system according to a political theory embraced in Europe, and by liberal elites, but long rejected in the United States. In the legal context, the critique is framed as a conceptual question: how could the Constitution contain a requirement of seats-votes fairness at odds with the system of geographic electoral districting the Founders embraced? Instead of mandating a particular electoral system, the Founders adopted the Elections Clause, which leaves that decision to the states and to Congress.[60] Since the Founding, states have apportioned their legislatures on a geographic basis. And since 1842, Congress has mandated single-member electoral districts for congressional elections. Related to this conceptual question is a practical one: if courts embrace a legal standard based on a seats-votes conception of fairness in tension with geographic electoral districting, would it be a trojan horse that ultimately replaces geographic electoral districting with proportional representation, or takes away the traditional role of state legislatures in drawing the lines, or perpetually necessitates intensive federal judicial superintendence of the districting process? Invoking Justice O'Connor's concurrence in the judgment in *Bandemer*, Justice Roberts' majority opinion in *Rucho* critiques partisan gerrymandering claims for relying on a statewide party-based seats-votes framework inconsistent with the American tradition of geographic electoral districting:

("Districting itself represents a middle ground between winner-take-all statewide elections and proportional representation for political parties."). This is why Congress has mandated geographic electoral districting for the House of Representatives since 1842. *See* Apportionment Act of June 25, 1842, ch. 47, §§ 1–2, 5 Stat. 491 (codified as amended at 2 U.S.C. § 2c (1967)); *see* ROYCE CROCKER, CONG. RSCH. SERV., CONGRESSIONAL REDISTRICTING: AN OVERVIEW 3–4 (2012).

[58] JOHN STUART MILL, CONSIDERATIONS ON REPRESENTATIVE GOVERNMENT 144–68 (1861) (strongly advocating proportional representation as "True Democracy" while critiquing districted elections with plurality voting as "False Democracy") (Chapter VII—Of True and False Democracy; Representation of All, and Representation of the Majority Only); GARDNER & CHARLES, *supra* note 55, at 33 ("Few political scientists favor plurality decision rules, or even majority decision rules, both of which are winner-take-all electoral systems. Most political scientists tend to favor proportional representation . . . .").

[59] *See Bandemer*, 478 U.S. at 159 (O'Connor, J., concurring in the judgment) ("If there is a constitutional preference for proportionality, the legitimacy of districting itself is called into question.").

[60] U.S. CONST. art. I, § 4.

Partisan gerrymandering claims rest on an instinct that groups with a certain level of political support should enjoy a commensurate level of political power and influence. Explicitly or implicitly, a districting map is alleged to be unconstitutional because it makes it too difficult for one party to translate statewide support into seats in the legislature. But such a claim is based on a "norm that does not exist" in our electoral system—"statewide elections for representatives along party lines."[61]

The efficiency gap measure illustrates how difficult it is to navigate the inherent tension between seats-votes fairness and geographic electoral districting. Strict seats-votes proportionality entails a responsiveness of *one*, *i.e.*, one percent more vote share yields one percent more seat share. But political scientists have long known that geographic electoral districting often obeys something like a "cubic law" with a responsiveness of *three*, *i.e.*, one percent more vote share yields three percent more seat share.[62] This large winner's bonus deviates substantially from strict proportionality. One of the most interesting features of the efficiency gap measure is that each party wastes equal votes when there is a responsiveness of *two*, *i.e.*, one percent more vote share yields two percent more seat share.[63] This approach is more flexible than strict proportionality but more constrained than the cubic law. It lets the majority party enjoy some winner's bonus, but not too much. In this way, the efficiency gap splits the difference between the ideal of strict proportionality and the natural operation of geographic electoral districting. The measure's proponents framed this as a desirable feature to facilitate limited judicial intervention, curbing the most extreme seats-votes unfairness without constraining too much the operation of geographic electoral districting or the traditional discretion exercised by state legislatures in the mapmaking process. But, of course, the efficiency gap was simply attacked by both Scylla and Charybdis: some critiqued it for operating too much like strict proportionality; others for operating not enough like strict proportionality.[64] This problem cannot be solved by simply developing a "better" seats-votes measure. The fundamental problem is not the efficiency gap itself, but the tension between the norm of seats-votes fairness and the system of geographic electoral districting we seek to tame but not destroy.

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[61] *See* Rucho v. Common Cause, 139 S. Ct. 2484, 2499 (2019) (quoting *Bandemer*, 478 U.S at 159 (O'Connor, J., concurring in the judgment)).

[62] Edward R. Tufte, *The Relationship Between Seats and Votes In Two-Party Systems*, 67 Am. Pol. Sci. Rev. 540 (1973).

[63] *See supra* note38.

[64] *Compare* Whitford v. Gill, 218 F. Supp. 3d 837, 934 (W.D. Wis. 2016) (Griesbach, J., dissenting) ("[T]he efficiency gap . . . is little more than an enshrinement of a phantom constitutional right, namely, the idea that voters for one party are entitled to some given level of representation proportional to how many votes that party's candidates win in every assembly district throughout the state as a whole."), *with* Cover, *supra* note 16, at 1232 ("To the extent that normative intuitions support a system in which vote share and seat share should be roughly equal, the efficiency gap undermines that norm - and not only in extreme scenarios.").

Our approach avoids this problem altogether by taking geographic electoral districting on its own terms. It goes with, rather than against, the logic of geographic electoral districting. It takes seriously the idea that geographic electoral districting confers meaningful representational benefits unattainable through proportional representation. But it then demands that geographic electoral districting align with its rationale. If the representational benefits of geographic electoral districting warrant the risk of a distorted seats-votes relationship, then these benefits matter and should be distributed fairly. Thus, our approach does not presuppose "a norm that does not exist."[65] It is not a trojan horse intended to remake our electoral system. It accepts that geographic electoral districting, at least for state legislatures and the House of Representatives, predominates: it has been our historical tradition; it characterizes our present institutional commitments; and it appears likely to persist, at least for the foreseeable future.[66] "Central to American politics is the notion that representation should be based on geographically defined districts."[67] While calls for proportional representation persist,[68] the national reform movement's primary demand is fair maps, not no maps.[69]

Of course, *is* does not mean *ought*, and the predominance of geographic electoral districting over proportional representation does not necessarily mean that geographic electoral districting confers distinct representational benefits. Geographic electoral districting may persist in part precisely because it is a powerful instrument of partisan advantage. Or geographic electoral districting may be an anachronism. A cynic may attribute its persistence exclusively to elite preference for gerrymandering, perhaps combined with historical accident, path dependence, and institutional inertia. If geographic electoral districting today is pure historical anachronism, nothing more than an instrument of seats-votes unfairness, the first-best solution is to replace it with proportional representation, and the second-best solution is to constrain districting so that it better approximates proportional representation. In this case, anything worth saying about fair districting lies within the seats-votes conception of fairness. We do not make the strong claim that the predominance of geographic electoral districting is exclusively attributable to its representational benefits. But we likewise reject the equally strong claim that the predominance of geographical electoral districting is exclusively attribu-

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[65] *See Bandemer*, 478 U.S. at 159 (O'Connor, J., concurring in the judgment) ("[E]fforts to determine party voting strength presuppose a norm that does not exist—statewide elections for representative along party lines.").

[66] McKaskle, *supra* note 53, at 1124.

[67] Bernard Grofman, *Would Vince Lombardi Have Been Right if He Had Said: "When It Comes to Redistricting, Race Isn't Everything, It's the Only Thing"?*, 14 Cardozo L. Rev. 1237, 1262 (1993).

[68] *See, e.g.*, Douglas J. Amy, Proportional Representation: The Case for a Better Election System (1997); Matthew Yglesias, *Proportional Representation Could Save America*, Vox (Oct. 15, 2018, 1:00 PM), https://www.vox.com/policy-and-politics/2018/10/15/17979210/proportional-representation-could-save-america [https://perma.cc/RE6T-8GKM].

[69] *See, e.g.*, *What We Want*, Fair Elections Project, https://www.fairelectionsproject.org/what-we-want/ [https://perma.cc/6LYV-5WM2].

table to cynical reasons unrelated to any representational benefits. Instead, we argue that the persistence of geographic electoral districting suggests, at least in part, that Americans find something meaningful in it, something that would be lost if we abandoned it for proportional representation. If so, that something cannot be captured by a seats-votes approach.

What precisely are the representational benefits of geographic electoral districting? They involve what a lawyer would call First Amendment activity and what a political scientist would call informational symmetry. By facilitating a geographic-based set of representational relationships amongst constituents, representatives, candidates, organizers, and media, geographic electoral districting promotes a rich array of core First Amendment activity: speech, press, assembly, petition, and expressive association.[70] To petition the government, or to access constituent services, a voter can visit (or contact) her representative in a local district office, rather than a party bureaucracy in the state capital.[71] Closer to her constituents, the representative can better understand and more effectively represent her constituents' interests in the legislature. And the campaign invites neighbors to engage one another in a debate about shared values, interests, and issues. Many government services are place-based in a way that unites neighbors in common concern regarding their delivery: roads, schools, transportation, parks, law enforcement, utilities, and economic development. Political science and election law scholarship recognizes the value of geographic representation.

Many of the districting criteria codified in state law reflect an effort to enhance geographic representation. This makes sense: if a geographic conception of representation justifies the choice to draw electoral districts in the first place, it should also inform the subsequent decision-making about how to draw the lines. If the goal is to facilitate representative relationships and democratic participation through territorial community, an electoral district should correspond to a coherent, identifiable constituency with shared place-based interests, values, and issues of legislative concern. The stronger the connection, the more coherent the constituency, the tighter the correspondence between electoral district and territorial community, the more the map advances or promotes constituents' geographic representational interests. And the converse is true: the weaker the connection, the less coherent the constituency, the looser the correspondence between district and community, the more the map burdens or disserves constituents' geographic representational interests.

How would we draw the lines if the objective was to maximize an electoral map's geographic representational benefits? One criterion is

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[70] U.S. Const. amend. I; NAACP v. Button, 371 U.S. 415, 431 (1963) ("[T]he right to engage in political expression and association . . . was enshrined in the First Amendment.") (internal citation omitted); Eu v. S.F. Cty. Democratic Cent. Comm., 489 U.S. 214, 223 (1989) (noting that the First Amendment "'has its fullest and most urgent application' to speech uttered during a campaign for political office").

[71] David Niven, Benjamin Plener Cover & Michael Solomine, *Are Individuals Harmed by Gerrymandering? Examining Access to Congressional District Offices*, 102 Soc. Sci. Q. 29 (2021).

cognizability, which Grofman defines in terms of the ease with which the average voter could explain and understand district boundaries "in common-sense terms based on geographical referents."[72] Cognizable districts promote geographic representation; non-cognizable districts frustrate it.

> [T]he cognizability of district boundaries that results when bound-aries can be clearly identified in terms of proximate geography, facilitates voter identification of and with the district. Permitting the construction of districts, whose boundaries are simply not de-finable in commonsense terms, vitiates the principle that repre-sentatives are to be elected from geographically defined districts and vitiates the advantages of such districts as the basis of electoral choice. Also, when districts are not cognizable, it is especially hard to dislodge incumbents; there is no straightforward geographical basis of electoral organization for change, and the costs of campaigning are increased.[73]

Some districting criteria codified in state law can be understood as ef-forts to promote cognizability. Kansas and Nebraska explicitly provide that electoral districts should be "easily identifiable" and "easily understandable" to voters.[74] Alaska requires the mapmaker to describe district boundaries in terms of drainage and other geographic features.[75] Other states direct the mapmaker to start with a grid-like pattern or number districts consecu-tively.[76] Some states have explicit criteria regarding irregular district shapes.[77]

A related criterion is *traversability*, which refers to the ease with which a representative and her constituents can travel throughout the district. This promotes geographic representation by facilitating face-to-face interactions. Minnesota, New York, and Washington call for "convenient" electoral districts.

Cognizability and traversability are necessary, but not sufficient, for ef-fective geographic representation. Districts must also capture coherent, meaningful territorial communities with shared place-based interests. Ver-

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[72] Grofman, *supra* note 67, at 1262.

[73] *Id.* at 1262–63.

[74] *Guidelines and Criteria for 2012 Kansas Congressional and Legislative Redistricting*, Kan. Leg. Rsch. Dep't (Jan. 9, 2012), http://www.kslegislature.org/li_2012/b2011_12/committees/misc/ctte_h_redist_1_20120109_01_other.pdf [https://perma.cc/E3G3-LNTB]; L.R. 102, 102nd Leg., 1st Sess. (Neb. 2011).

[75] ALASKA CONST. art. VI, § 6.

[76] ARIZ. CONST. art. IV, pt. 2, § 1 ("districts of equal population in a grid-like pattern across the state"); CAL. CONST. art. XXI, § 2(f) (districts "shall be numbered consecutively commencing at the northern boundary of the State and ending at the southern boundary"); MINN. CONST. art. IV, § 3 ("The senate districts shall be numbered in a regular series."); WIS. CONST. art. IV, § 5 ("The senate districts shall be numbered in the regular series . . . ."); MICH. COMP. LAWS § 3.63(c)(ix) ("Each congressional district shall be numbered in a regular series . . . .").

[77] Idaho Code § 72-1506; *see* Guy v. Miller, No. 11 OC 00042 1B, 2011 Nev. Dist. LEXIS 31 (Nev. Dist. Ct. Sept. 21, 2011); S.C. House of Representatives Judiciary Comm., Election L. Subcomm., 2011 Guidelines and Criteria for Congressional and Legislative Redis-tricting (2011).

mont calls for "recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests."[78] Alaska strives to capture "a relatively integrated socio-economic area."[79] In all, 19 states use community of interest as a districting criterion for congressional maps, 23 for state legislative maps.[80]

Some districting criteria promote cognizability, traversability, and correspondence to a coherent territorial community. One is contiguity, which is satisfied when "every part of the district is reachable from every other part without crossing the district boundary."[81] It is easier to understand, traverse, and engage with a contiguous district. And if geographic communities of interest are contiguous, electoral districts should be too. Every state identifies contiguity as a districting criterion.[82] Some states use more restrictive definitions of contiguity, which exclude districts featuring areas that can only be connected via water crossing, a point connecting adjacent corners, a bridge, or a route by road that crosses the district boundary.[83]

Another criterion is compactness, which measures how spread out a district is.[84] The relevance of compactness is instrumental, not constitutive. It is easier for a voter to understand and engage with her district if her district is relatively compact. It is easier for a representative and her staff to travel across her district, or for a constituent to visit her representative's office, or attend a district town hall, if the district is relatively compact. Given the complexities of transportation networks and residential patterns, com-

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[78] 17 Vt. Stat. Ann. tit. 17, § 1903.

[79] ALASKA CONST. art. VI, § 6.

[80] Chen and Kim, *supra* note 24, at 149–150 (Tables 1 & 2).

[81] Bernard Grofman, *Criteria for Districting: A Social Science Perspective*, 33 UCLA L. REV. 77, 84 (1985).

[82] 29 states require contiguity for congressional maps, 49 for state maps. Chen and Kim, *supra* note 24, at 149-150 (Tables 1 & 2). Congress required contiguity for congressional districts from the mid-nineteenth century to the early twentieth century. Emanuel Celler, *Congressional Apportionment—Past, Present, and Future*, 17 L. & CONTEMP. PROBS. 268, 272–73 (1952). The Apportionment Act of 1842 first required that states with multiple House Representatives elect them through contiguous single-member districts. *Id.* These requirements were dropped in the 1850s but reinstated in 1862 and every subsequent reapportionment act until 1911. *Id.* The 1929 Act made no mention of these requirements, and the Court held that the 1911 Act no longer applied. *See* Wood v. Broom, 287 U.S. 1, 8 (1932).

[83] Grofman, *supra* note 81, at 84 n.37; *see* MICH. CONST. art. IV, § 3 (excluding water crossing); IOWA CODE § 42.4(3) (excluding point contiguity); IDAHO CODE § 72-1506 ("When a legislative district contains more than one (1) county or a portion of a county, the counties or portion of a county in the district shall be directly connected by roads and highways which are designated as part of the interstate highway system."); ME. REV. STAT. ANN. tit. 21-a, § 1206-A ("[A] 'functionally contiguous and compact territory' is one that facilitates representation by minimizing impediments to travel within the district. Impediments to travel include, but are not limited to, physical features such as mountains, rivers, oceans and discontinued roads or lack of roads.").

[84] Compactness has been studied extensively and defined in many different ways. Michael McDonald, *The Predominance Test: A Judicially Manageable Compactness Standard for Redistricting*, 129 YALE L.J.F. 18 (2019); Aaron Kaufman, Gary King & Mayya Komisarchik, *How to Measure Legislative District Compactness If You Only Know It When You See It*, AM. J. POL. SCI. (forthcoming 2021), https://gking.harvard.edu/files/gking/files/compact.pdf [https://perma.cc/BR4W-MWG5].

pactness does not logically entail traversability and cognizability, but correlations are plausible. And while geographic communities rarely come in "squares or circles," and such shapes are not "desirable per se,"[85] to the extent geographically communities are reasonably compact, electoral districts should be too. Thirty-nine states identify compactness as a criterion.[86] "[F]ederal courts have frequently referred to the desirability of compact districts."[87]

These are just some of the geographic districting criteria adopted by states.[88] All these criteria demonstrate the value states accord to geographic representation. Our approach uses the geographic criteria states mandate and asks whether they are applied fairly. This may help facilitate judicial intervention and offer both methodological and conceptual benefits. We now demonstrate this theory in action, by applying it to the geographic districting criterion that has arguably played the greatest role historically in American electoral districting: the preservation of local boundaries, specifically counties.

II. APPLICATION: UNFAIRNESS IN COUNTY SPLITS

This Part examines unfairness in county splits. Section A explains why county splits matter. Section B presents results regarding how the burden of county splits is distributed.

A.   County Splits

This Section explains why county splits matter. Subsection 1 briefly summarizes the evolving role American counties have played in political life and electoral districting. Subsection 2 surveys the political science literature on the representational burden of county splits.

1.   American Counties in Electoral Districting

The origins of the modern American county can be traced back a millennium to the English shire, an administrative unit that William the Conqueror retained after the Norman Conquest of 1066.[89] From the start, the

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[85] Grofman, *supra* note 81, at 89–90.

[86] 38 states codify a compactness criterion for state legislative districting. Chen and Kim, *supra* note 24, at 149 (Table 1). 26 states codify a compactness criterion for congressional districting. *Id.* at 150 (Table 2). Congress added a compactness requirement for congressional districts in 1901 and renewed it in 1911, but the 1929 apportionment act made no references to such requirements, and the Court held in 1932 that the 1911 act requirements no longer apply. Celler, *supra* note 82, at 271; *Wood*, 287 U.S. at 8.

[87] Grofman, *supra* note 81, at 85.

[88] The conclusion discusses additional geographic districting criteria.

[89] Tanis J. Salant, *Overview of County Governments*, *in* HOW AMERICAN GOVERNMENTS WORK: A HANDBOOK OF CITY, COUNTY, REGIONAL, STATE, AND FEDERAL OPERATIONS 117 (Roger L. Kemp ed., 2002). The term sheriff, or "shire-reeve", means "protector of the

county had a dual identity as both a top-down administrative arm of the state and a bottom-up mechanism of local control.[90] For centuries before the American Revolution, geographic representation prevailed throughout Europe, and the English Parliament allocated representatives to counties or boroughs, irrespective of population.[91] British colonists brought these practices with them to North America, and colonial assemblies allocated representatives to counties and other local government units.[92] Several models of county government, each adapting traditional forms to new circumstances, spread in the British colonies: Massachusetts's weaker county form, with more limited service provision, throughout New England;[93] Virginia's strong county form throughout the South;[94] and an intermediate New York/New Jersey county supervisor model throughout Illinois, Michigan, and Wisconsin.[95] These distinctive models of county government, and associated systems

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shire or county." James Tomberlin, *"Don't Elect Me": Sheriffs and the Need for Reform in County Law Enforcement*, 104 VA. L. REV. 113, 116–17 (2018). The term county derives from the Late Latin *comitatus*, which means "jurisdiction of a count." *County*, ONLINE ETYMOLOGY DICTIONARY, https://www.etymonline.com/search?q=county [https://perma.cc/B8FZ-BYJU].

[90] Early county government consisted of justices of the peace, appointed by the King, and performed judicial, military, and public works functions. *See* Salant, *supra* note 89, at 117.

[91] *See* ROBERT LUCE, LEGISLATIVE PRINCIPLES: THE HISTORY AND THEORY OF LAW-MAKING BY REPRESENTATIVE GOVERNMENT 331 (1930). Each Welsh county elected a single representative, while each English county elected two, known as "knights of the shire." Whereas counties were large areas, generally rural, boroughs included villages and large industrial towns. Cambridge and Oxford were also granted representation in parliament. CHARLES SEYMOUR, ELECTORAL REFORM IN ENGLAND AND WALES 46 (1915); *see* McKaskle, *supra* note 52, at 1138–39 & n.83 ("Even after Parliament became the dominant political force in Great Britain, the method of selecting members of the House of Commons remained, until 1832, on the same geographical basis that existed continuously from the Middle Ages.").

[92] Victor S. DeSantis, *County Governments and Change*, *in* HOW AMERICAN GOVERN-MENTS WORK: A HANDBOOK OF CITY, COUNTY, REGIONAL, STATE, AND FEDERAL OPER-ATIONS 123–24 (Roger L. Kemp ed., 2002) ("Tradition of county government was well ingrained . . . ."); ELMER CUMMINGS GRIFFITH, THE RISE AND DEVELOPMENT OF THE GERRYMANDER 23 (1907) ("The unit of representation was usually the county, town, or parish. Most frequently the political unit employed for election purposes was the county.").

[93] In early colonial New England, "the county operated in the background of the town." DeSantis, *supra* note 92, at 124. Towns, with their annual town meetings, were the "heart" of local decision-making, but counties were established to perform various functions not performed by smaller towns, such as judicial, military, and fiscal administration. *Id.* Today, three of the four states not fully partitioned into county governments are Massachusetts, Connecticut, and Rhode Island. *2017 Census of Governments, Individual State Descriptions: 2017*, U.S. CENSUS BUREAU 3–4 (2019), https://www.census.gov/content/dam/Census/library/publications/2017/econ/2017isd.pdf [https://perma.cc/K6NM-THGV].

[94] Virginia adopted a more robust model of county government better suited to a predominantly agricultural society with a rural population widely dispersed over a much larger geographic area. Here, the county was the primary unit of local government, providing broader service delivery, far more significant than smaller units of municipal government. DeSantis, *supra* note 92, at 124; *see* Salant, *supra* note 89, at 118.

[95] The "middle colonies" that would become the Middle Atlantic states, including New York and New Jersey, divided their states into counties, but elected township officials automatically served as members of the county board of supervisors. Salant, *supra* note 89, at 118. These colonial counties provided road construction and maintenance, welfare programs for the poor, and law enforcement, with the county sheriff as the "primary focal point." DeSantis, *supra* note 92, at 124. This reflects a scope of colonial service provision less than that in the South but greater than that in New England. Rick Su, *Democracy in Rural America*, 98 N.C. L. REV. 837, 853 (2020); *see* Salant, *supra* note 89.

of geographic, often county-based, representation, were well established by the time of the Founding.

Just as the nation adopted a state-based system of national representation, most states adopted a county-based system of state representation, establishing a pattern that would continue in various forms for almost two centuries until the reapportionment revolution of the 1960s subordinated such geographic considerations to the constitutional mandate of population equality. Between 1776 and 1785, eleven of the thirteen original states adopted new constitutions, nine with bicameral legislatures, for a total of twenty legislative chambers.[96] Eight of them used counties or county groupings as the exclusive units of apportionment. Another six used both counties and other local units (like cities and towns) as units of apportionments. The remaining six chambers used other local units (like towns or parishes) or electoral districts that were initially, but not necessarily permanently, composed of counties. These county-based systems of representation were reinforced by county-based durational residency and property ownership requirements for electors and candidates. These county-based systems persisted for decades.[97]

Counties also served as the "building blocks" of early congressional districts.[98] For congressional districting, county preservation was not a requirement of positive law, but a traditional practice.[99] County splits occasionally

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[96] Del. Const. of 1776; Ga. Const. of 1777; Mass. Const. of 1780; Md. Const. of 1776; N.C. Const. of 1776; N.H. Const. of 1784; N.J. Const. of 1776; N.Y. Const. of 1777; Pa. Const. of 1776; S.C. Const. of 1778; Va. Const. of 1776. Connecticut and Rhode Island remained governed by royal charter until 1818 and 1843, respectively. Georgia and Pennsylvania originally used unicameral state legislatures, which were subsequently made bicameral in 1789 and 1790, respectively. Pa. Const. of 1790, art. I, §§ 4–6; Ga. Const. of 1789, art. I, §§ 2–6. South Carolina and New Hampshire adopted provisional constitutions in 1776 which were superseded by permanent constitutions respectively adopted in 1778 and 1784. S.C. Const. of 1776; N.H. Const. of 1776. Vermont adopted a constitution in 1777 with a town-based system of legislative apportionment, but Congress refused to recognize it, New York claimed that area as part of its own territory into the 1780s, and Vermont did not attain statehood until 1791. *See generally* Peter S. Onuf, *State–Making in Revolutionary America: Independent Vermont as a Case Study*, 67 J. Am. Hist. 797 (1981).

[97] James A. Gardner, *Foreword: Representation Without Party: Lessons from State Constitutional Attempts to Control Gerrymandering*, 37 Rutgers L.J. 881, 900 (2006) ("Until about 1845, state constitutions overwhelmingly designated the county as the primary unit of representation in the house of representatives, or lower chamber, of the state legislature; that is, representatives were by constitutional direction elected from counties rather than from other territorial divisions of the state.")

[98] Engstrom, Erik J., *Partisan Gerrymandering and the Construction of American Democracy*, University of Michigan Press, 2013. p. 89 ("[C]ounties were the building blocks of most [congressional] districts. . ."); Nicholas O. Stephanopoulos, *Redistricting and the Territorial Community*, 160 U. Pa. L. Rev. 1379, 1387–88 (2012) ("[T]he county was typically the building block for the congressional district."); Micah Altman, *Districting Principles and Democratic Representation* 1, 162-63 (1998) (Ph.D. dissertation, California Institute of Technology) 21 (1998) ("Historical Congressional districts were, generally. . .composed of entire counties").

[99] Altman, *supra* note 98, at 163, n. 112 ("Although Congressional districts were never required to be composed of whole counties, the vast majority of these districts did not, in fact, split such boundaries.")

occurred,[100] but they were the exception to the rule.[101] From the Founding to the Civil War, county preservation generally prevailed in congressional districting.[102]

    As congressional districting and legislative apportionment schemes evolved, the predominant theme was a struggle to reconcile geographic and demographic theories of representation and the competing interests in county preservation and population equality. The result of this struggle was not the wholesale abandonment of county-based systems, but rather an in-cremental process of modification intended to achieve some accommodation between the two goals. Others have exhaustively documented the evolution of state apportionment schemes and the various mechanisms developed to accomplish this accommodation between geography and demography.[103] States would give more representatives to more populous counties, but not enough to achieve strict population equality: chamber size was limited; small counties were guaranteed some minimum representation, even when popula-tion alone would dictate less; large counties were limited to some maximum number of representatives, even when population alone would dictate more; a "weighted ratio" formula would allocate additional seats based on a "pro-gressively higher ratio of population requirement."[104] Even when states drew electoral districts, their boundaries corresponded closely to those of local units such as counties, often because mapmakers were directed to avoid

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[100] Altman, *supra* note 98, at 22 ("Even in the early Congresses it is easy to find districts that. . .split counties. . .Higher levels of. . .splits in county lines, and ill-compactness occurred regularly in postbellum cities, where concentrated populations made it difficult to justify the use of entire counties as building blocks, and redistricters split counties and other political subdivisions.").

[101] Nicholas O. Stephanopoulos, *Redistricting and the Territorial Community*, 160 U. PA. L. REV. 1379, 1407 (2012) ("[C]ongressional districts in the 1800s typically were composed of whole towns and counties and rarely crossed their boundaries."); Bowen, Daniel Christo-pher, *District Characteristics and the Representational Relationship*, Diss., The University of Iowa, 55-56 (2010) ("Thus throughout the first half of American history, district boundaries followed political units like towns and counties (especially counties)."); Stephen Ansolabehere & Maxwell Palmer, *A Two–Hundred Year Statistical History of the Gerrymander*, 77 OHIO ST. L.J. 741, 753 (2016) ("Before [*Baker*] congressional districts. . .were often drawn using town or county lines.").

[102] Micah Altman, *Traditional Districting Principles: Judicial Myths vs. Reality*, 22 SOC. SCI. HIST. 159, 180 (1998) ("Very few [congressional] districts divided town and county boundaries; most were composed of whole counties and towns, or of whole counties sub-tracting only towns. Districts do begin to divide towns and counties following the Third Con-gress, but through the 38th Congress [1863-1965] the only deviations from this trend were for entire wards and other similarly sized units in urban areas.").

[103] *See generally* ROBERT B. MCKAY, REAPPORTIONMENT: THE LAW AND POLITICS OF EQUAL REPRESENTATION (1965); Douglas Keith & Eric Petry, *Apportionment of State Legis-latures, 1776–1920*, BRENNAN CTR. FOR JUST. (2015), https://www.brennancenter.org/our-work/research-reports/apportionment-state-legislatures-1776-1920 [https://perma.cc/X57D-6LPW]. Justices Frankfurter and Harlan recounted this evolution in state legislative appor-tionment as compelling evidence that a mandate of population equality is inconsistent with both Founding-era and Reconstruction-era historical practice. *See* Baker v. Carr, 369 U.S. 186, 302–11 (1962) (Frankfurter, J., dissenting); Reynolds v. Sims, 377 U.S. 533, 602–11 (1964) (Harlan, J., dissenting).

[104] MCKAY, *supra* note 103, at 290.

county splitting or joinder. In this way, states tried to reconcile geographic and demographic considerations through county-based systems of legislative apportionment, much like the nation's founders accommodated competing interests through the "Great Compromise" of a state-based system of national legislative apportionment, with an upper house apportioned among the states on the basis of state equality and a lower house apportioned among the states on a modified population basis.

Between the Civil War and World War I, this effort to reconcile geography and demography moderately weakened county preservation in congressional districting.[105] In 1902, over three quarters of congressional districts reflected county and municipal boundaries.[106] In the first half of the twentieth century, industrialization, urbanization, and population growth increased service demand for both cities and counties.[107] This massive demographic change also produced extreme disparities in county populations and thus extreme malapportionment in congressional and state legislative maps based on county lines. For example, the congressional map challenged in *Wesberry v. Sanders*, which featured one district with more than double the population of another, was produced by grouping counties into congressional districts.[108]

Ultimately the United States Supreme Court intervened, confronted the tension between demographic and geographic theories of representation, and chose the former over the latter. Through a series of cases in the 1960s, the Court established a constitutional requirement of substantial population equality, launching the so-called "reapportionment revolution," and remaking democratic institutions across the nation. In so doing, the Court rejected the "federal analogy," and the primacy of geographic representation, insisting that the "Great Compromise" was *sui generis*, that counties were subordinate political subdivisions not analogous to sovereign states, and that geographic considerations could not justify substantial departures from population equality. This equal population mandate necessarily limited the role that

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[105] Altman, *supra* note 102, at 180("Between the 40th Congress and the 62d there were some splits even of these subunits, but only in a handful of major cities (New York, Boston, Philadelphia, St. Louis, Baltimore, New Orleans, Chicago)."); Altman, *supra* note 98, at 162-63 ("Districts split larger boundaries with increasing frequency after the 43rd congress. . ."); Stephanopoulos, *supra* note 101, at 1407-08 ("Most congressional districts also continued to respect the boundaries of political subdivisions (though the number of infractions inched higher).").

[106] Bowen, *supra* note 101, at 55 ("In fact, 303 of the 386 House districts in 58th Congress (1903-1905) were determined entirely by county boundaries or were exactly coterminous with entire cities.")

[107] In the antebellum period, industrial growth and urbanization increased service demand for counties and cities alike. Salant, *supra* note 89.

[108] Wesberry v. Vandiver, 206 F. Supp. 276, 279 (N.D. Ga. 1962), rev'd sub nom. Wesberry v. Sanders, 376 U.S. 1 (1964) ("[I]n 1931. . .the General Assembly divided the state into ten congressional districts on the basis of allocating the several counties to the respective districts, and there have been no changes in the allocations to date."); *see id.* at 228 (citing the population disparities produced by Florida's contemporaneous congressional map as a sharp example of the variance in population per district if counties are to continue as a basis for districts).

counties could play in congressional and state legislative districting.[109] In the wake of the reapportionment revolution, county splits in congressional districts "skyrocket[ed]."[110] After the reapportionment revolution, county preservation cannot be the lodestar of congressional districting.

The one-person-one-vote cases were controversial and nonunanimous in part because of the predictable adverse impact an equal population mandate would have on county preservation in electoral districting. One lower court feared that strict population equality might cause "an increase in the size of districts to such an extent that contacts between the individual legislator and his constituents may become impracticable."[111] Another concluded that Colorado's plan reflected a reasonable compromise between demographic and geographic factors, including county lines, and "a proper diffusion of political initiative as between a state's thinly populated counties and those having concentrated masses."[112] Justice Stewart endorsed these views in a strident dissent.[113]

The majority rejected the primacy, but not the normative and legal significance, of county lines in electoral districting. It recognized the relevance and legitimacy of geographic considerations like contiguity, compactness, and county preservation.[114] The Court further recognized that "[i]ndiscriminate districting, without any regard for political subdivision or natural or historical boundary lines, may be little more than an open invitation to partisan gerrymandering."[115] States could not continue systems of

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[109] Altman, *supra* note 98, at 24 ("By demanding that apportionment of population be unhistorically equal, the Court weakened the principles of county integrity, compactness, and contiguity.").

[110] Altman, *supra* note 98, at 22 ("Following *Wesberry* and *Reynolds*, the number of districts splitting county lines skyrocketed."); *Id.* at 107 ("After *Reynolds* and *Wesberry* the number of districts that split even political subunits of counties and cities triples, and such splitting becomes widespread outside major urban areas."); Bowen, *supra* note 101, at 59 ("By 1973, the number of congressional districts splitting counties or cities without following other boundaries such as state legislative districts more than doubled the 1963 amount; over 40% of all congressional districts failed to be coterminous with county or place boundaries.").

[111] WMCA, Inc. v. Simon, 208 F. Supp. 368, 379 (S.D.N.Y. 1962), *rev'd sub nom.* WMCA, Inc v. Lomenzo, 377 U.S. 633, 640 (1964).

[112] Lisco v. Love, 219 F. Supp. 922, 932 & n.34 (D. Colo. 1963) (quoting W.M.C.A., Inc. v. Simon, 208 F. Supp. 368, 379 (S.D.N.Y. 1962)).

[113] Lucas v. Forty-Fourth Gen. Assembly, 377 U.S. 713, 757 (1964) (Stewart, J., dissenting) ("[C]ounties having small populations would have to be merged with larger counties having totally dissimilar interests. Their representatives would not only be unfamiliar with the problems of the smaller county, but the interests of the smaller counties might well be totally submerged by the interests of the larger counties with which they are joined."); *id.* at 762–63 ("A policy guaranteeing minimum representation to each county is certainly rational, particularly in a State like New York. It prevents less densely populated counties from being merged into multi-county districts where they would receive no effective representation at all. . ..it may be only by individual county representation that the needs and interests of all the areas of the State can be brought to the attention of the legislative body. The rationality of individual county representation becomes particularly apparent in States where legislative action applicable only to one or more particular counties is the permissible tradition.").

[114] *Id.* at 578 ("A State may legitimately desire to maintain the integrity of various political subdivisions, insofar as possible, and provide for compact districts of contiguous territory in designing a legislative apportionment scheme. Valid considerations may underlie such aims.").

[115] *Id.* at 578–79.

county-based representation when that would entail "a total subversion of the equal-population principle," which was particularly likely when a state had a large number of sparsely populated counties and the number of counties was not much less than the number of seats in the legislative chamber.[116] But geographic factors like county boundaries could justify "some deviations from the equal-population principle" in state legislative apportionment.[117] And the Court noted that "it may be feasible to use political subdivision lines to a greater extent in establishing state legislative districts than in congressional districting" because there are almost always more members in a state's legislative chamber than in its congressional delegation.[118] The Court also recognized that county preservation may confer distinct representational benefits in state legislative districting.[119]

After the Court established the equal population mandate, states did not abandon their historical commitment to county preservation in state and congressional districting. Instead, states tried to preserve the role of counties to the extent possible while achieving substantially equal population. One of the key techniques to thread the needle and make the numbers work was multi-member districting, where multiple representatives were assigned to a single electoral district, which was often a single county or a grouping of contiguous counties.[120] The Court recognized that multi-member districting with district-wide winner-takes-all elections could "operate to minimize or cancel out the voting strength of racial or political elements of the voting population."[121] But it refused to hold multi-member districts *per se* invalid on that basis, noting that *Reynolds* itself called for flexibility so states could try

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[116] *Id.* at 581.

[117] *Id.* at 579.

[118] *Id.* at 578.

[119] *Id.* at 580-81. ("A consideration that appears to be of more substance in justifying some deviations from population-based representation in state legislatures is that of insuring some voice to political subdivisions, as political subdivisions. Several factors make more than insubstantial claims that a State can rationally consider according political subdivisions some independent representation in at least one body of the state legislature, as long as the basic standard of equality of population among districts is maintained. Local governmental entities are frequently charged with various responsibilities incident to the operation of state government. In many States much of the legislature's activity involves the enactment of so-called local legislation, directed only to the concerns of particular political subdivisions.").

[120] Whitcomb v. Chavis, 403 U.S. 124, 156–57 & n.37 (1971) ("[T]here is no doubt that some States switched to multi-member districts as a result of [the reapportionment] decisions. Prior to the decisions, for example, Vermont's lower house was composed entirely of single-member districts. . . . Reapportioned and redistricted in light of Reynolds, Vermont's lower house now has 36 multi-member and 36 single-member districts . . . Reapportionment has also been credited with abolishing Maryland's tradition of single-member districts in its senate."); *see also* Kilgarlin v. Hill, 386 U.S. 120, 124 n.2 (1967) (quoting Kilgarlin v. Martin, 252 F. Supp. 404, 455–56 (S.D. Tex. 1966)) (guidance from state attorney general on how legislature could reconcile the federal mandate of population equality with the state constitutional prohibition on splitting counties: "Should the keeping of counties intact result in a violation of the Supreme Court 'one man, one vote' rule, then the county lines must be violated but only to the extent necessary to carry out the mandate of the Supreme Court. In all other instances, county lines must remain intact and multi-county districts or floterial districts be formed by the joining of complete and contiguous counties.").

[121] Fortson v. Dorsey, 379 U.S. 433, 439 (1965). .

to preserve the role of counties in an equipopulous way.[122] And it repeatedly rejected as-applied challenges to multi-member districts.[123]

In states' efforts to preserve counties, they departed from perfect population equality, sometimes a little, sometimes a lot. The Court struggled to determine whether to accommodate or circumscribe these efforts. The Court maintained that "variations from a pure population standard might be justified by such state policy considerations as the integrity of political subdivisions, the maintenance of compactness and contiguity in legislative districts or the recognition of natural or historical boundary lines."[124] The Court insisted that states bear the burden of justifying population deviations.[125] And conclusory declarations would not suffice: the state had to demonstrate that legitimate criteria, consistently applied, necessitated particular deviations.[126] But the Court consistently recognized the preservation of local units as one

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[122] *Id.* at 436 (quoting *Reynolds*, 377 U.S. at 579) ("[I]n holding that a State might legitimately desire to maintain the integrity of various political subdivisions, such as counties, we said: 'Single-member districts may be the rule in one State, while another State might desire to achieve some flexibility by creating multimember or floterial districts.'"); Burns v. Richardson, 384 U.S. 73, 88 (1966) (citations to *Forston* omitted) ("[T]he Equal Protection Clause does not require that at least one house of a bicameral state legislature consist of single-member legislative districts. Where the requirements of [equal population] are met, apportionment schemes including multi-member districts will constitute an invidious discrimination only if it can be shown that 'designedly or otherwise, a multi-member constituency apportionment scheme, under the circumstances of a particular case, would operate to minimize or cancel out the voting strength of racial or political elements of the voting population.'").

[123] *Fortson*, 379 U.S. at 439; *Burns*, 384 U.S. at 88; Mann v. Davis, 245 F. Supp. 241, 245 (E.D. Va. 1965), *aff'd sub nom;* Burnette v. Davis, 382 U.S. 42 (1965) (affirming the validity of multi-county multi-member districts, county-city multi-member districts, and "adherence to municipal boundaries in establishing legislative districts"); Schaefer v. Thomson, 251 F. Supp. 450, 452 (D. Wyo. 1965), *aff'd sub nom.* Harrison v. Schaefer, 383 U.S. 269 (1966) (reapportioning Wyoming Senate into a combination of single and multi-member districts that "[w]henever possible . . . preserves the established county boundaries . . . [and] combined only contiguous counties"); *Kilgarlin*, 386 U.S. at 121 (rejecting claim that combination of "single-member, multi-member and floterial districts [produced] an unconstitutional 'crazy quilt'"); *Whitcomb*, 403 U.S. at 142 n.22; Abate v. Mundt, 403 U.S. 182, 184 n.2 (1971).

[124] Swann v. Adams, 385 U.S. 440, 444 (1967).

[125] *Id.* ("[N]one of our cases suggests that differences of this magnitude will be approved without a satisfactory explanation grounded on acceptable state policy."); *Kilgarlin*, 386 U.S. at 122 ("[U]nless satisfactorily justified . . . [significant] population variances . . . are sufficient to invalidate an apportionment plan."); *cf. Swann*, 385 U.S. at 447 (Harlan, J., dissenting) ("This holding seems to me to stand on its head the usual rule governing this Court's approach to the validity of legislative enactments. . . .").

[126] *Swann*, 385 U.S. at 445 ("[Florida] suggested . . . that its plan comes as close as 'practical' to complete population equality and [it] was attempting to follow congressional district lines . . . [but made] no attempt to justify any particular deviations, even the larger ones, with respect to either of these considerations . . . only . . . followed 'in most instances' the congressional boundaries, and [Florida] could have come much closer to providing districts of equal population than it did."); *Kilgarlin*, 386 U.S. at 124 ("[T]he [lower court] did not relate its declared justification to any specific inequalities among the districts, nor demonstrate why or how respect for the integrity of county lines required the particular deviations . . . . Nor did the [lower court] articulate any satisfactory grounds for rejecting at least two other plans presented to the court, which respected county lines but which produced substantially smaller deviations . . . .").

of the few state interests justifying some departure from population equality for state and local districts.[127]

2.   The Representational Burden of County Splits

This Subsection surveys the political science literature demonstrating the representational significance of county preservation in electoral districting.

The election process begins and ends at the county level.[128] That is, counties are responsible for the administration and implementation of elections for local, state, and national races. Beyond that pertinent administrative reality, though, an array of political science scholars have long championed the value of respecting county and other natural political boundaries during the redistricting process.[129] Geographic units like counties are "natural communities of interest,"[130] comprised of people with an array of geographic and economic commonalities.[131] As such, districts can be "meaningful entities which have legitimate collective interests" if they are built from the existing boundaries of cities and counties.[132]

Making congressional district lines congruent with county and other existing political boundaries benefits both members of Congress and voters. Stokes notes that his "interview studies. . .show how much more salient to his voters is the congressman whose district comprises a 'natural' community. . .than the congressman whose district is a fraction of a great metropolitan complex."[133] Meanwhile, voter confusion is the natural byproduct when "congressional boundaries cut across geographical and political subdivisions in crazy-quilt fashion."[134] While the rhetoric in favor of respecting county boundaries is strong, these assertions are also backed by mounting statistical evidence. Several studies offer compelling data linking boundary incongruency with infirmities in the very building blocks of representation, like

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[127] *Abate*, 403 U.S. at 183 (permitting a 12% deviation based on long-standing tradition of respecting sub-county political boundaries); Mahan v. Howell, 410 U.S. 315, 333 (1973) (permitting a 16% deviation in state legislative apportionment based on state interest in preserving cities and counties).

[128] As described by the National Association of Counties: "In the United States, the nation's 3,069 counties traditionally administer and fund elections at the local level, including overseeing polling places and coordinating poll workers for federal, state and local elections." Eryn Hurley, *All Elections Are Local: The County Role in the Elections Process*, NAT'L ASS'N OF CTYS. (Nov. 6, 2018), https://www.naco.org/resources/featured/all-elections-are-local-county-role-elections-process [https://perma.cc/PPB8-WTTQ].

[129] DAVID BUTLER & BRUCE E. CAIN, CONGRESSIONAL REDISTRICTING: COMPARATIVE AND THEORETICAL PERSPECTIVES (1992).

[130] Daniel C. Bowen, *Boundaries, Redistricting Criteria, and Representation in the U.S. House of Representatives*, 42 AM. POL. RSCH. 856, 864 (2014).

[131] BUTLER & CAIN, *supra* note 129.

[132] Richard L. Morrill, *Redistricting, Region and Representation*, 6 POL. GEOGRAPHY Q. 241, 253 (1987).

[133] Donald E. Stokes, *Parties and the Nationalization of Electoral Forces in the American Party Systems*, in THE AMERICAN PARTY SYSTEMS: STAGES OF POLITICAL DEVELOPMENT 197 (William Nisbet Chambers & Walter Dean Burnham eds., 1967).

[134] Richard G. Niemi et al., *The Effects of Congruity Between Community and District on Salience of U.S. House Candidates*, 11 LEGIS. STUD. Q. 187, 189 (1986).

electoral accountability and the relationship between members and constituents.[135]

3. Recall and Accountability

Researchers have posited that when district lines diverge from county and city lines, the task of the voter becomes harder.[136] It is harder to know what district one resides in when a community is split into pieces and divided into multiple districts. It is harder for political and community groups to engage in congressional politics and spread information in an incongruent district since groups are typically formed around cities, counties, or larger regions rather than adhering to the often-jagged contours of a congressional district. In short, districts that respect political boundaries facilitate using the "community's potential as an information pathway."[137]

Consistent with this view, studies have found that voters in incongruent districts have a harder time identifying their member of Congress.[138] Even while accounting for the influence of various measures of member prominence and voter interest, Niemi, Powell, and Bicknell find that respondents in congruent districts were 8% more likely to recall the name of their incumbent member of Congress, and 13% more likely to recall the name of the challenger candidate.[139] Winburn and Wagner focus on voters placed in what they call the "short end of the split," that is, voters in divided counties where the majority of the county has been placed in another district.[140] They find such voters are about 12% less likely to correctly name their House candidates.[141] This effect persists even as the researchers account for the influence of personal factors (knowledge, political activism, demographics) and district/media conditions (like media market congruency).

Impaired recall of candidates has enormous consequences for voting. In their study on redistricting's effect on election outcomes, Hood and McKee found that candidate awareness was a primary driver of voter decisions such that respondents who could not recall a candidate were quite unlikely to vote for that candidate.[142] Meanwhile, as Winburn and Wagner warn, incongruency is associated with lower awareness of House candidates but not lower voter participation.[143] Which is to say, residents of incongruent dis-

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[135] Bowen, *supra* note 130, at 867.

[136] BUTLER & CAIN, *supra* note 129.

[137] Richard Neal Engstrom, Electoral District Structure and Political Behavior 18 (May 2001) (Ph.D. dissertation, Rice University) (ProQuest).

[138] Niemi et al., *supra* note 134, at 193; Jonathan Winburn & Michael W. Wagner, *Carving Voters Out: Redistricting's Influence on Political Information, Turnout, and Voting Behavior*, 63 POL. RSCH. Q. 373, 376 (2010); John A. Curiel & Tyler Steelman, *Redistricting Out Representation: Democratic Harms in Splitting Zip Codes*, 17 ELECTION L.J. 328, 340–41 (2018).

[139] Niemi et al., *supra* note 134, at 193.

[140] Winburn & Wagner, *supra* note 138, at 373.

[141] *Id.* at 379.

[142] M. V. Hood III & Seth C. McKee, *Stranger Danger: Redistricting, Incumbent Recognition, and Vote Choice*, 91 SOC. SCI. Q. 344, 347 (2010).

[143] Winburn & Wagner, *supra* note 138, at 380.

tricts are left to cast their ballots with less access to information about whom they are voting for or against.

The recall evidence affirms a view advanced by many scholars that congressional districts with lines bearing little or no resemblance to natural and existing boundaries are inherently confusing to voters. Grofman discusses the notion of whether a district is *cognizable*, that is, affording "the ability to characterize the district boundaries in a manner that can be readily communicated to ordinary citizens of the district in commonsense terms based on geographic referents."[144] If a district looks like an existing place, made up of towns or counties, then that district can likely be conjured in the minds of voters. If it is composed of a series of zig-zagging lines and a collection of distant outposts, however, it cannot be as readily understood, expressed, or even recognized.[145]

Figure 1. 3rd District of Iowa.

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[144] Grofman, *supra* note 67, at 1262.
[145] *Id.* at 1262–63.

FIGURE 2. 12TH DISTRICT OF OHIO
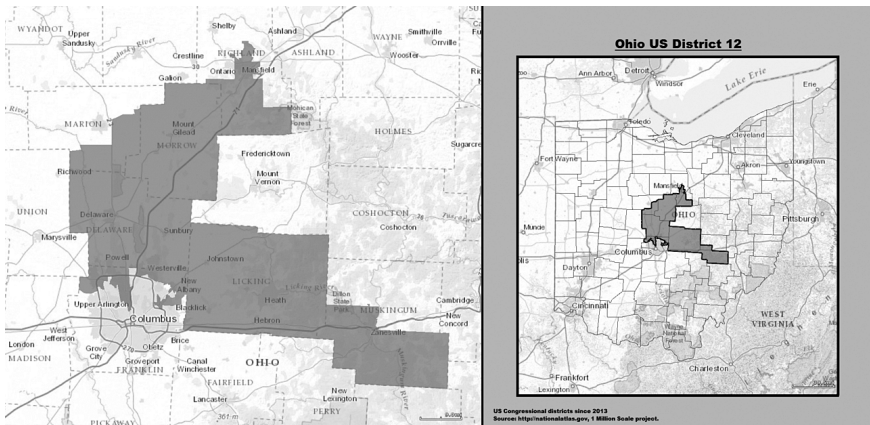
Consider the contrast between Iowa's 3rd district (Figure 1) and Ohio's 12th district (Figure 2). Iowa's 3rd district could reasonably be described as southwest Iowa. The district's borders correspond to the boundaries of Iowa counties and the towns within them. Ohio's 12th district, by contrast, is more difficult to plainly characterize. It includes the entirety of three counties, and bits of four others, including what appears to be pincer claws that reach down to claim parts of Franklin County. Grofman questions whether districts so difficult to meaningfully characterize, built with disregard for political boundaries, ultimately undermine the very purpose of having districts (rather than simply holding at-large elections) because they so readily thwart the relationships that districts are meant to foster.[146]

Winburn and Wagner assert that voters like those Franklin County residents placed in the 12th district endure an "informational asymmetry"[147] that makes it more difficult to follow news of the district and its representative. Indeed, this dynamic was in stark display in the 2018 election. On August 7, 2018, a special election was held in Ohio's 12th district to fill the seat left open when the incumbent resigned earlier in the year. The Franklin County Board of Elections later revealed that more than 4,000 people called the board in various states of alarm and confusion to ask why their local polling place had failed to open on the date of the special election.[148] There was a simple explanation—the callers did not live in the 12th district.

The confusion on the part of those voters was understandable given the odd shapes of the county's districts. Indeed, not only is the county split into pieces, but within the county municipal boundaries are such an afterthought

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[146] *Id.* at 1262.

[147] Winburn & Wagner, *supra* note 138, at 374.

[148] Jack Torry & Jessica Wehrman, *Eager Voters Turned Away—Because They Don't Live in the 12th Congressional District*, COLUMBUS DISPATCH (Aug. 11, 2018, 5:01 PM), https://www.dispatch.com/news/20180811/eager-voters-turned-away—-because-they-dont-live-in-12th-congressional-district [https://perma.cc/ME3V-8H7S].

that fourteen out of sixteen cities in Franklin County are split between multiple districts.[149] The difficulty in understanding the precise boundaries of the district was such that even election officials were not equal to the task. The Franklin County Board of Elections revealed that from 2012 through the 2018 primary election, 2,000 county voters had been assigned to the wrong congressional districts in county election files.[150] For six years, the county gave those voters the wrong ballot and counted those votes for the wrong candidates. When the mistake was finally recognized, the board was forced to tell hundreds of voters that they were no longer in the 12th district, or more precisely, they had never been in the 12th district and would now be reassigned to the correct congressional district. Meanwhile, hundreds of other voters had to be reassigned into the 12th district.[151]

Residents of Iowa's 3rd district, by contrast, could depend on having the same congressional district as every neighbor in their town—the same district as every neighbor in their county. And in some places like Montgomery and Adams Counties, every resident of those counties and every resident of any contiguous county shared the same congressional district. Knowing your district, who serves it, and who seeks office there is a more straightforward proposition in such circumstances.

For the purposes of electoral accountability, then, districts crossing community lines are "generally an undesirable feature . . . for citizen understanding of their contacts with government."[152] Given voters' familiarity with the cities and counties in which they live, "it is less disruptive or confusing to respect those boundaries" when constructing congressional districts.[153] Districts based on real boundaries have "real meaning in everyday life for voters," and thus "the district becomes grounded in pre-existing understandings of politics and community structure."[154] Ultimately, districts that imperil voters' ability to recall who serves them in Congress and hamper their ability to identify challenger candidates dampen the mechanisms of accountability.

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[149] Local government alignment with Congressional districts based on U.S. Census data. STAT. ATLAS, *Overview of Ohio*, https://statisticalatlas.com/state/Ohio/Overview [https://perma.cc/5HE3-WDC9].

[150] Jeremy Pelzer, *More Than 2,000 Franklin County Voters Were Assigned to Wrong Congressional District, Election Officials Say*, CLEVELAND.COM (June 29, 2018), https://www.cleveland.com/open/index.ssf/2018/06/2000_franklin_county_voters_we.html [https://perma.cc/QTS9-QK3B].

[151] *Id.* None of the impacted races had close victory margins. Had there been a close election, it might have been contested, and the relevant ballots might have been declared invalid and excluded from the official tally. OHIO REV. CODE ANN. §§ 3515.08, 3515.13. To the extent county splits exacerbate the risk of such electoral maladministration, it undermines an eligible voter's legally cognizable interest in casting her ballot and having it count. United States v. Saylor, 322 U.S. 385, 388 (1944) (quoting United States v. Mosley, 238 U.S. 383, 386 (1915) ("[T]he right to have one's vote counted is as open to protection by Congress as the right to put a ballot in a box.")).

[152] Charles H. Backstrom, *Problems of Implementing Redistricting*, *in* REPRESENTATION AND REDISTRICTING ISSUES 43, 50 (Bernard Grofman et al. ed., 1982).

[153] RICHARD L. MORRILL, POLITICAL REDISTRICTING AND GEOGRAPHIC THEORY 25 (1981).

[154] Bowen, *supra* note 130, at 867.

That is, it is hard to reward and punish candidates without knowing who they are, what they have done, or that they represent you.

4. *Responsiveness and Relationships*

In an effort to understand how members of Congress function in their home districts, political scientist Richard Fenno spent years observing members in what he called "their natural habitats."[155] What he saw, with remarkable consistency, was the degree to which members were affected by the nature and structure of their districts. "Members thrive where some sense of community already exists," Fenno wrote. "They are products of it, they identify with it, they celebrate it, they even legitimate it; but they do not create it."[156] Fenno's point is essential to understanding a member's relationships to their district. Where there are communities of interest, members seek them out. Where there are widespread economic or cultural touchstones, members situate themselves within them. But—importantly—where districts lack coherence, members are hard-pressed to cobble together commonalities and connections that are not already there.

While a House district might have 700,000 or so residents, those individuals are not equally central to a member's thinking.[157] The district a member sees—in a practical sense—does not encompass every town or every person. Nor is it a representative sample of the whole. Fenno finds that, in a practical sense, the district that a representative experiences is something closer to what we might call "the base" vote.[158] The supporters essential to staying in office are top of mind and literally seen, as the representative seeks out speaking opportunities before such friendly audiences. As Fenno describes the dynamic, the farther one is from the center of a representative's radar, the less a representative sees or hears such people's views, and the less influence one likely enjoys over the representative's thinking.

Systematic studies support Fenno's depiction of representation. For example, a study comparing the constituent comments a representative directly encounters with the views of a full sample of the district found huge inconsistencies between the two.[159] In other words, the district's thinking as the representative encounters it can bear little resemblance to the district's thinking as it actually exists.

The deleterious effect of incongruent districts on this very relationship has been documented in multiple studies. Bowen found that residents in congruent districts are more likely to have positive evaluations of their member of Congress's constituent service.[160] Curiel and Steelman found that re-

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[155] Richard F. Fenno, Jr., Home Style: House Members in Their Districts 250 (1978).

[156] *Id.* at 236.

[157] *Id.*

[158] *Id.* at 236–37.

[159] John S. Stolarek et al., *Measuring Constituency Opinion in the U.S. House: Mail Versus Random Surveys*, 6 Legis. Stud. Q. 589, 591 (1981).

[160] Bowen, *supra* note 130, at 858.

sidents in divided districts were less likely to contact their member of Congress to seek assistance or to share their views.[161] Members of Congress have acknowledged this dynamic at work. Ralph Regula, who served 18 years in the House, warned that the district map put in place in Ohio in 2011 would deter people from contacting their member because of the confusion it would produce. "One of the key elements of a congressional district is that people have to know where to go when they need help," Regula said.[162]

Like the evidence showing incongruity dampens voter recall of the candidates, the effect on constituent contact again suggests incongruency comes at a "clear representational cost."[163] In fact, analyzing the responses of tens of thousands of survey respondents, Curiel and Steelman also find incongruent districts are likely to foster more ideological distance between constituents and their members of Congress.[164] Much as Fenno warned that members can represent a community but cannot create one, Curiel and Steelman find it is simply harder to represent a district that scrambles boundaries because one is left to make sense of disparate interests. "Districts that unify proximate voters into the same district" make it easier for members of Congress to be responsive to district interests because it is easier to identify those interests in the first place.[165]

Members of Congress quite often build their careers on delivering projects for their districts.[166] Members boast of the resources they bring home from Washington and the transformative effects of investments in infrastructure and other projects. And yet, as widespread as this transactional form of representation is, here again the effect of district congruency is considerable. Bowen finds that residents in incongruent districts are less likely to recall their member of Congress advancing a local project than are residents of congruent districts.[167] Whether this dynamic exists because members legitimately deliver less to incongruent districts, or because residents are less aware of the local projects the member delivered, this discrepancy represents yet another burden on the residents of incongruent districts because, given the confusing nature of their district's boundaries, they must work harder to find out if their member is actually delivering for the district.

In sum, political science research suggests that incongruent districts produce "informational and representational disadvantages."[168] The confusion engendered by incongruent districts inhibits recall, relationships, and

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[161] Curiel & Steelman, *supra* note 138, at 13–14.
[162] Jim Siegel, *His Car Can Handle Miles of Redrawn District, Says Stivers*, COLUMBUS DISPATCH (Sept. 21, 2011, 12:01 AM), http://www.dispatch.com/article/20110921/NEWS/309219702 [https://perma.cc/NUD4-9VYG].
[163] Bowen, *supra* note 130, at 856.
[164] Curiel & Steelman, *supra* note 138, at 28.
[165] Bowen, *supra* note 130, at 859.
[166] DIANA EVANS, GREASING THE WHEELS: USING PORK BARREL PROJECTS TO BUILD MAJORITY COALITIONS IN CONGRESS 5 (2004).
[167] Bowen, *supra* note 130, at 880.
[168] Winburn & Wagner, *supra* note 138, at 383.

representation.[169] Political scientists are left to call for a renewed commitment to creating districts which preserve counties and other governing units: "Too often ignored, in our view, is how the cartographers of redistricting draw some voters out of their natural community of interest, the county in which they live, and into a district of strangers."[170]

B.   Data Analysis

In this Section, we use demographic data drawn from the 2010 U.S. Census and political data drawn from the U.S. Election Atlas.[171] We focus on congressional maps rather than state legislative maps. As discussed supra, county splits matter for both congressional maps and state legislative maps. County splits implicate a series of normative and practical considerations, some of which apply similarly in both contexts, some of which apply differently in one context or the other. For example, congressional maps generally require fewer county splits because congressional districts are much larger than state legislative districts. Moreover, the size of congressional districts varies less across states than the size of state legislative districts. Our focus on congressional districts similarly avoids complexity related to other characteristics of legislative bodies that vary across states. On the other hand, county preservation may confer distinct representational benefits, and county splits may impose distinct burdens, in the context of state legislative maps.[172] For this reason, while we focus on congressional maps in this Article, we encourage others and hope ourselves to examine differential county splits in state legislative maps in future work.

We focus on the thirty-five states with four or more congressional representatives in the 2010 reapportionment.[173] These thirty-five states have 2,598 counties. Most states have used one congressional map throughout the 2010 cycle. In those states with mid-cycle map changes, we analyze the first congressional map of the cycle. Our analysis considers only the original legislature-drawn map that was struck down, not the subsequent court-drawn map that replaced it.

Our analysis focuses on unnecessary or extra county splits, recognizing that the equal population mandate requires some splits. For each state, we use 2010 census data for its total population and the number of districts in

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[169] Pildes and Niemi expand on the point to consider the effect on voters' outlook, positing that when they see the bizarre shapes of their districts, they are likely to realize they have been the subject of a manipulation that devalues their input. Richard H. Pildes & Richard G. Niemi, *Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating Election-District Appearances After* Shaw v. Reno, 92 MICH. L. REV. 483, 525–26 (1993).

[170] Winburn & Wagner, *supra* note 138, at 381.

[171] *2016 Presidential General Election Results*, DAVE LEIP'S ATLAS OF U.S. ELECTIONS, https://uselectionatlas.org/RESULTS/ [https://perma.cc/BX9K-KAD7]

[172] *See supra* note 119.

[173] To maximize mathematical variation necessary for analysis, numerous researchers exclude from analysis states with seven or fewer districts. Veomett, for example, includes only states with eight or more districts. Veomett, *supra* note 16, at 253–54. By including states with four to seven districts, we create a more difficult test to demonstrate disparities.

its congressional map.[174] A state's ideal district population is the state's total population divided by the number of districts in the state's congressional map.[175] We then define a county's population ratio as the county's 2010 population divided by the state's ideal district population.[176] A county's population ratio tells us how many county splits a mapmaker must impose to satisfy the equal population mandate. If a county's ratio is less than one, no split is required; if the ratio is between one and two; one split is required. More generally, the number of splits a county requires is the county's population ratio rounded down to the nearest integer, *i.e.* the largest integer equal to or less than the county's population ratio. The number of extra splits imposed on a county is the difference between the number of splits actually imposed and the number of required splits.

To see this approach in action, consider Los Angeles County, California. In 2010, California had 53 representatives for a total state population of 37,341,989.[177] Thus, California's ideal district size was 704,566 (37,341,989/ 53). Los Angeles County had a 2010 population of 9,818,605,[178] and thus a population ratio of approximately 13.9 (9,818,605/704,566). Thus, to satisfy the equal population mandate, Los Angeles County had to be split across 14 districts. But it was actually split across 18 districts.[179] This means that Los Angeles County was subject to 4 unnecessary or extra splits.

1. County Splits Overall

To simplify our discussion, we use the following notation:

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[174] Congress has required since 1969 that each state elect Representatives from single-member districts, PL 90-196, 81 Stat. 581., so for each state, the number of districts in its congressional map equals the number of Representatives it is apportioned.

[175] The ideal district population is the number of people that would reside in each district if each district contained an identical number of people. All population figures come from census data for 2010. We assume that the relevant denominator for purpose of the equal population mandate is total population, rather than citizen voting age population (CVAP). While some have suggested that a state should and may use CVAP as the relevant dominator, states have consistently used total population and the Court has expressly approved this practice. Evenwel v. Abbott, 577 U.S. 937, 1122 (2016); Nicholas Stephanopoulos & Jowei Chen, *Democracy's Denominator*, 109 CAL. L. REV. 1011 (2021); Crum, *infra* note 188.

[176] Again, we use census data. *See* County Population Totals, *supra* note 29.

[177] *2010 Census Apportionment Results*, United States Census Bureau, Table 1, https://www.census.gov/data/tables/2010/dec/2010-apportionment-data.html [https://perma.cc/UHK8-37LR].

[178] County Population Totals, *supra* note 29.

[179] *Maps: Final Certified Congressional Districts*, CA.GOV, https://wedrawthelines.ca.gov/maps-final-draft-congressional-districts/ [https://perma.cc/VH3J-YH8W].

Term	Definition
A *preserved* county	A county subject to no splits
A *split* county	A county subject to at least one split
A *respected* county	A county subject to no extra splits
A *fractured* county	A county subject to at least one extra split
A *splintered* county	A county subject to at least two extra splits

The range of fractured counties is quite vast. Van Buren County, Tennessee, for example, with a 2010 population of 5,548 residents, could have fit inside one Tennessee congressional district 127 times.[180] Instead, it was split into two districts.[181] Will County, Illinois, with a 2010 population of 677,560, could have been preserved intact within a single Illinois district.[182] Instead, Will County was split into six congressional districts.[183] As discussed above, Los Angeles County, California, with almost 10 million residents, required fourteen districts, but was split into eighteen districts. Using the definition described above, congressional mapmakers imposed one extra split on Van Buren County, four extra splits on Los Angeles County, and five extra splits on Will County.

Respected counties are diverse, too. Loving County, Texas (population 82) was accommodated within one district.[184] San Diego County, California, with a population of 3,095,313, required five districts by population, and was in fact split into five districts.[185]

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[180] County Population Totals, *supra* note 29. In 2010, Tennessee was apportioned nine representatives for a total state population of 6,375,431. *2010 Census Apportionment Results*, *supra* note 177, at Table 1. Thus, Tennessee's ideal congressional district population was 708,381 (*i.e.*, 6,375,431/9), and Van Buren's county population ratio is approximately 127.7 (*i.e.*, 708,381/5,548).

[181] Van Buren County was split between Tennessee's Fourth and Sixth congressional districts. TENN. CODE ANN. § 2-16-103(a)(2) ("each district is described county by county in alphabetical order and, if a county is split, by the portion of such split county. Split counties are described by VTDs and, if further divided, by census blocks."); TENN. CODE ANN. § 2-16-103(b) (The state of Tennessee is divided into the following nine (9) congressional districts composed as follows: . . . (4) District 4: . . . Van Buren County [enumeration of VTDs and census blocks]. . .(6) District 6:. . . Van Buren County [enumeration of VTDs and census blocks]"). This county split is also reflected in the district maps available at https://www.capitol.tn.gov/districtmaps/Congress12.html.

[182] County Population Totals, *supra* note 29. In 2010, Illinois was apportioned 18 representatives for a total state population of 12,864,380. *2010 Census Apportionment Results*, *supra* note 177, at Table 1. Thus, Illinois's ideal congressional district population was 714,688 (*i.e.*, 12,864,380/18), which exceeds the population of Will County.

[183] *See* Illinois Congressional Redistricting Act, Public Act 097-0014, available at https://www.ilga.gov/legislation/billstatus.asp?DocNum=1178&GAID=11&GA=97&DocTypeID=SB&LegID=56011&SessionID=84.

[184] County Population Totals, *supra* note 29. Loving County was contained entirely in Texas's 25th District. See SB4, available at https://capitol.texas.gov/BillLookup/Text.aspx?LegSess=821&Bill=SB4.

[185] County Population Totals, *supra* note 29; *Maps: Final Certified Congressional Districts*; *supra* note 180.

The full scope of county splitting is perhaps most easily illustrated with a simple count. Across the thirty-five states under study, 137.3 million Americans live in respected counties. The majority of residents in the states under study, however, totaling some 154.8 million people, live in fractured counties that were unnecessarily split.

That 53% of the residents of these states are subject to extra splitting of their counties speaks to the ubiquity of gerrymandering and the compromised nature of the districting process. In total, more than 150 million Americans must deal with the confusion and representational burdens associated with living in a fractured county.[186] Perhaps more to the point, though, Americans do not equally bear the burden of extra county splits.

2. County Splits and Race Overall

We consider the relationship between county splits and racial demographics, relying on aggregate census data (based on which racial descriptors survey respondents self-select).[187] Throughout, we use the capitalized racial descriptors "Black" and "White."[188]

Table 1 shows the overall percentage of the population by race living in fractured counties. Among Whites, just over half are living in fractured counties. Among Black residents, however, this proportion is almost 61 percent. For ease of comparison, a ratio is calculated showing the likelihood of Black residents living in a fractured county relative to Whites. The ratio here is 1.2, meaning that Black residents are 1.2 times as likely to be living in a fractured split county. Statistical significance, akin to a measure of how likely this relationship is to have occurred by chance alone, is represented by the p value 0.0000000000227. In layperson's terms, the likelihood of this disparity happening by chance alone is less than one in a trillion.

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[186] *See* Winburn & Wagner, *supra* note 138, at 373–74.

[187] Charles Hirschman, Richard Alba, and Reynolds Farley, *The Meaning And Measurement Of Race In The US Census: Glimpses Into The Future*, 37 DEMOGRAPHY 381 (2000).

[188] *See* Travis Crum, *Deregulated Redistricting*, 107 CORNELL L. REV. __, 10 n.40 (forthcoming 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3847829 [https://perma.cc/GR2M-YKE3] (quoting Kwame Anthony Appiah, *The Case for Capitalizing the B in Black*, ATLANTIC, https://www.theatlantic.com/ideas/archive/2020/06/time-to-capitalize-blackandwhite/613159/ [https://perma.cc/T3YT-AY4D]; *see also* I.M. Nick, *Black Rising: An Editorial Note on the Increasing Popularity of a US American Racial Ethnonym*, 68 NAMES 131 (2020).

TABLE 1. LIKELIHOOD OF RESIDING IN A FRACTURED COUNTY BY
RACE[189]

Proportion of Whites residing in fractured counties	50.7%
Proportion of Black residents residing in fractured counties	60.9%
Proportion of Non-Whites residing in fractured counties	61.1%
Ratio, White to Black	1.20
Ratio, White to Non-White	1.21

p value = 0.0000000000227

Another way to consider the question is to look at the racial makeup of counties based on the number of extra splits (shown in Table 2). That is, we calculate the racial makeup for counties subject to no extra splits, *i.e.*, what percentage is White and what percentage is Black. We then calculate those same percentages for counties subject to one extra split, and for counties subject to two or more extra splits.

Again, the data offer a simple illustration of the racial imbalance in county splits. Whites comprise more than 86% of the population of respected counties (no extra splits), dropping to just under 82% of counties split one extra time, and 77% of counties split two or more extra times. Conversely, Black residents comprise less than 10% of the population of respected counties (no extra splits), rising to 13% of counties split one extra time and 15% of counties split two or more extra times. Again, the p value suggests the odds of this pattern occurring by chance alone are quite remote.

As previous research finds, splitting counties imposes representational burdens on residents, and this is particularly the case in counties split multiple times. In such cases, residents are more likely to, as Winburn and Wagner put it, be placed among "strangers" in their own districts.[190] As both Table 1 and Table 2 show, this is a treatment disproportionately imposed on Black residents.

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[189] Considering the entire non-White population, 61.1% reside in unnecessarily split counties.

[190] Winburn & Wagner, *supra* note 138, at 381.

TABLE 2. COUNTY RACIAL MAKEUP BY NUMBER OF EXTRA SPLITS[191]

Extra Splits	Percent White	Percent Black
0	86.3	9.9
1	81.7	13.1
2 or more	77.4	15.3

p value = 0.000000000018

Considering the racial characteristics of the counties offers yet another way to view the racial imbalance in county splits. Here, we determine how many extra splits are imposed on counties with a population of 90% or more White residents, counties with an 80 to 89% White population, and counties with a 70 to 79% White population.

The resulting pattern, shown in Table 3, is familiar. For counties with the highest percentage of White residents, the mean number of extra splits imposed is 0.10. Another way to think of that result: for every such county with one extra split imposed, nine more were left without any extra splits. For counties with 80 to 89% White population, the mean number of extra splits is 0.29. In other words, for every such county with one extra split, roughly four were respected. For counties with 70 to 79% White population, the mean rises a bit more to 0.33. Again, the p value suggests a highly statistically significant relationship.

TABLE 3. EXTRA SPLITS IMPOSED BY PREVALENCE OF WHITE RESIDENTS

Percent White	Extra Splits (mean)
90 or above	0.10
80 – 89.9	0.29
70 – 79.9	0.33

p value = 0.00000046

Taken as a whole, the data show that Whites are less likely to reside in fractured counties, while Black residents are considerably more likely to reside in fractured counties. This conclusion is supported regardless of whether one examines the likelihood of living in a fractured county by race, the racial makeup of counties by the number of extra splits, or the proportional imposition of extra splits by racial prevalence. In all cases, there is a strong association between a concentration of White residents and a reduced imposition

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[191] For the entire non-White population, the percentages are: no extra split, 13.7; one extra split, 18.3; two or more extra splits, 22.6.

of extra county splits and a concomitant association between a concentration of Black residents and an increased imposition of extra county splits.

3.   County Splits, Race, and Mapmaker

Tables 1-3 demonstrate a correlation between race and county splits, but they do not explain why this correlation arises. Perhaps there is a benign explanation for this correlation, such as efforts to create majority-minority districts or otherwise comply with the Voting Right Act (VRA). Perhaps residential patterns necessarily produce this correlation no matter how one draws the lines.

To better understand what produces this correlation, we consider who draws the lines in each state. We draw on the classification scheme used by Professor Justin Levitt in his website, All About Redistricting.[192] Arizona and California both use independent redistricting commissions. Iowa relies primarily on its Legislative Services Agency, a nonpartisan advisory body of civil servants. For these three states, we use the term independent to describe the mapmaking process and the resultant map. In the other 32 states we study, the legislature itself draws the congressional map. In those states where the legislature draws the lines, we distinguish between those where one party controls the process and where both major parties play a role. Table 4 shows how we categorize the 35 states into four groups based on whether the mapmaking process that produced the congressional map was Bipartisan (B), Republican (R), Democratic (D), or Independent (I).[193]

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[192] Justin Levitt, *All About Redistricting*, Loy. L.A. L. Sch., https://redistricting.lls.edu/ [https://perma.cc/57T8-E5WF] (last visited Aug. 24, 2020).

[193] Democratic and Republican states are classified by unified control of the political offices responsible for redistricting. Bipartisan states indicate that one house of the legislature was in the opposite party hands from the other house, or from the governor, or that one house was itself split equally between the parties. We also include in that category states where a bipartisan political committee draws the lines. For information on the redistricting process in each state, we utilize Professor Justin Levitt's database. Levitt, *supra* note 192. In states with mid-cycle map changes, we analyze the original map, and thus we categorize based on partisan control of the process that produced that original map.

TABLE 4. PARTISAN CONTROL OF MAPMAKING PROCESS

Bipartisan (B) [11]	Republican (R) [17]	Democratic (D) [4]	Independent (I) [3]
1. Colorado (CO)	1. Alabama (AL)	1. Arkansas (AR)	1. Arizona (AZ)
2. Connecticut (CT)	2. Florida (FL)	2. Illinois (IL)	2. California (CA)
3. Kentucky (KY)	3. Georgia (GA)	3. Massachusetts (MA)	3. Iowa (IA)
4. Minnesota (MN)	4. Indiana (IN)	4. Maryland (MD)	
5. Missouri (MO)	5. Kansas (KS)		
6. Mississippi (MS)	6. Louisiana (LA)		
7. New Jersey (NJ)	7. Michigan (MI)		
8. Nevada (NV)	8. North Carolina (NC)		
9. New York (NY)	9. Ohio (OH)		
10. Oregon (OR)	10. Oklahoma (OK)		
11. Washington (WA)	11. Pennsylvania (PA)		
	12. South Carolina (SC)		
	13. Tennessee (TN)		
	14. Texas (TX)		
	15. Utah (UT)		
	16. Virginia (VA)		
	17. Wisconsin (WI)		

If VRA compliance or residential patterns explain the correlation we've identified between extra splits and race, we would expect to see similar racial disparities regardless of who drew the district lines. Instead, as we see in Table 5, the racial imbalance varies widely, turning critically on who draws the lines.

Much like Table 1, Table 5 again shows the overall percentage of the population by race living in splintered counties. Here the data are further broken down by partisan control of the mapmaking process that produced the congressional map. In the last two columns of data, we see that, in contrast to the overall relationship demonstrated *supra*, in states where Democrats drew the lines a slightly smaller proportion of Black residents than Whites reside in splintered counties, whereas in states where an independent body drew the lines Black residents were only slightly more likely than Whites to live in splintered counties. In both these cases, however, the ratio is close to one and the possibility that chance alone could account for the slight differences cannot be dismissed.

The disparity widens considerably in those states where Republicans drew the lines. Here, less than 45 percent of White Americans reside in splintered counties, while almost 56 percent of Black Americans live in splintered counties. The ratio indicates Black Americans are 1.25 times more likely to reside in splintered counties when Republicans draw the lines. The p value suggests the odds of this disparity occurring by chance are vanishingly small.

Table 5. Likelihood of Residing in a Fractured County by
Race and Partisan Control[194]

Partisan Control	(B)	(R)	(D)	(I)
Percent of Whites residing in fractured counties	49.1	44.6	69.0	62.8
Percent of Black residents residing in fractured counties	70.4	55.9	66.4	65.9
Ratio	1.43	1.25	0.96	1.05
p value	0.000000000000000000000756	0.000003	0.127	0.158

Notably, the disparity in treatment between White and Black residents is sharpest when the map is bipartisan, *i.e.*, when both parties have some power over the redistricting process. Here, about 49% of Whites reside in fractured counties, while the corresponding figure for Black residents is above 70 percent. When both parties draw the lines, a Black resident is 1.43 times more likely than a White resident to reside in a fractured county. The odds of this disparity occurring by chance are far beyond the odds of choosing a winning Powerball number; indeed, they are a hundred trillion times more remote than choosing a winning Powerball number.[195] The fact that the relative treatment of White and Black residents varies by who drew the lines suggests that these disparities are driven by political considerations and not by residential patterns or an effort to achieve some standard of legal compliance.

To examine the effect of party control of the redistricting process from another angle, we calculated the number of extra splits imposed in counties where Black residents are more or less than 25% of the population (Table 6). Here, we find patterns remarkably consistent with the previous results. Once again, where the Democratic Party drew the lines, slightly *fewer* extra splits were imposed on areas with a large Black population. Where Republicans drew the lines, areas with a large Black population were subject to slightly more extra splits. It is, once again, where both parties drew the lines that the distinction is greatest. Here, in counties where Black residents are less than

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[194] For the entire non-White population, the proportion residing in an unnecessarily split county is 73.1 (Democratic Party), 56.1 (Republican Party), 69.6 (Both Parties), 66.6 (Independent Body).

[195] The p value for this relationship is 0.000000000000000000000756. According to the Florida Lottery website, the odds of any set of numbers being the winning combination in the Powerball lottery are one in 292,201,338. In other words, one would expect to randomly choose the winning Powerball number approximately 258,700,000,000,000 times more often than arriving at this level of racial disparity by chance. *See How to Calculate the Probabilities of Winning the Nine PowerBall Prize Levels*, Fla. Lottery, http://www.flalottery.com/exptkt/pwrball-odds.pdf [https://perma.cc/CG72-WKMW].

25% population, 0.166 extra splits were imposed per county. In counties where Black residents were more than 25% of the population, 1.4 extra splits were imposed. In other words, where both parties drew the lines, eight times as many extra splits were imposed on counties with a large Black population. (The final column is incomplete owing to a lack of a counties with a large Black population in states with independent mapmakers.)

TABLE 6. MEAN EXTRA SPLITS BY PREVALENCE OF BLACK RESIDENTS AND PARTISAN CONTROL

Partisan Control	(B)	(R)	(D)	(I)
Smaller Black population (< 25%)	0.166	0.181	0.318	0.186
Larger Black population (> 25%)	1.4	0.223	0.242	*
Ratio	8.43	1.23	0.761	--
p value	0.0000000104	0.181	0.60	--

*Insufficient cases.

In sum, the data suggest that as a direct consequence of redistricting procedures, on balance, and across the nation, Black residents are less likely to have access to the representational advantages associated with respected counties. Those advantages, according to the research literature reviewed here, include greater accountability of members, access to members, ideological symmetry with members, and even the delivery of projects. This dynamic is concentrated, however, under two conditions: states where Republicans drew the lines, and states where both parties held some measure of power in the redistricting process.

The origins and parameters of the relationship between party control and racial disparities are subjects no doubt worthy of comprehensive study in their own right. For now, based on the data, we assert only that race has been employed for political considerations, and that equity in district drawing appears to be a gerrymandering casualty in Republican-drawn maps and when both parties draw maps together. Maps drawn by an independent body, conversely, suggest that it is possible to construct maps without imposing a disparate representational burden on Black residents.

4.　County Splits and Party

We next examine the data in the same states and counties to consider differences in treatment of party supporters. Given that the maps in question were drawn in 2010, we measure partisan support by combining the results from the two preceding presidential elections (2004 and 2008).

In Table 7, we analyze only those 21 states where one party controlled the redistricting process. We calculate the vote for the out-party—the party

that did not draw the lines—in counties that were not subject to an unneces-
sary split, and those unnecessarily split one, two, and three or more times.

TABLE 7. OUT-PARTY SUPPORT BY SPLITTING OF COUNTIES

Extra Splits	Out Party Vote
0	41.2
1	45.0
2	46.6
3+	48.5
p value	0.0001

We find a clear relationship such that each additional extra county split
is associated with greater support for the out-party. In respected counties,
the mean support for the party that did not draw the lines was 41.2% of the
vote. By contrast, in counties with at least three extra splits, the out-party
received 48.5% of the vote. In other words, respected counties voted nearly
59% for the party that drew the lines, while counties with at least three extra
splits offered about 51% support. This relationship is statistically significant
(p = 0.0001).

The capacity or inclination of parties to split the other party's support-
ers, however, is not straightforward. As Tables 8 and 9 show, the underlying
relationship does not appear to be treatment of in-party relative to out-party
supporters, but rather treatment of Democrats relative to Republicans. That
is, regardless of whether Democrats, Republicans, or both parties drew the
lines, Democratic supporters are more likely to reside in fractured counties.

TABLE 8. DEMOCRATIC VOTE BY SPLITTING OF COUNTIES

Extra Splits	Democratic Vote
0	39.8
1	45.6
2	53.7
3+	55.8
p value	0.0000000000000000000000000000000122

Table 8 provides the mean Democratic Party support in counties not
subject to an extra split, and counties subject to one, two, and three or more
extra splits. The pattern is remarkably clear. Each additional extra split im-
posed is associated with greater support for the Democratic Party, with
respected counties providing just under 40% of their votes to Democrats and
counties unnecessarily split three or more times voting almost 56% for Dem-

ocrats. The p value suggests the odds of this relationship occurring by chance are infinitesimally small.

When the results are broken down by who drew the lines, it becomes clear that Democratic supporters are subject to additional county splits when Republicans draw the lines and when Democrats draw the lines. As shown in Table 9, in states where Democrats, Republicans, or both parties drew the lines, fractured counties were more supportive of the Democratic Party. In each of these three situations, the difference is statistically significant. When an independent body drew the lines, fractured counties were slightly more supportive of Democrats, but the difference is not statistically significant.

TABLE 9. SUPPORT FOR THE DEMOCRATIC PARTY BY SPLITTING OF
COUNTIES AND PARTY CONTROL

	(B)	(R)	(D)	(I)
No Extra Split	41.4	38.9	44.1	48.4
Extra Split	52.6	45.1	52.7	51.3
p value	0.00000000000000129	0.00000000000232	0.000002	0.207

Table 10 considers the treatment of counties by the relative strength of the parties. Here, counties are labeled "Strong Republican" if at least 70% support Republicans, "Strong Democratic" if at least 70% support Democrats, and "Competitive" if neither party enjoys 70% support.

We find, once again, a pervasive tendency to treat blue counties differently. By wide margins, lines drawn by Democrats, Republicans, and both parties subject strong Democratic counties to more extra splits. In all three cases, the differences are statistically significant. Perhaps especially stark is the disparity between Republican and Democratic counties when both parties drew the lines. In that case, strong Republican counties were not subject to any unnecessary splits, while the mean extra split imposed on strong Democratic counties was more than one. Once again, there was a smaller difference in treatment of the parties by independent maps, and again the difference that emerges did not reach statistical significance.

TABLE 10. MEAN EXTRA COUNTY SPLITS BY PARTY ELECTORAL
STRENGTH AND PARTY CONTROL

	(B)	(R)	(D)	(I)
Strong Republican	0.000	0.068	0.167	0.000
Competitive	0.169	0.22~	0.297	0.185
Strong Democratic	1.23~	0.32~	1.66~	0.33~
p value	0.0000000000000001385	0.00000001917	0.001	0.596

One constant across each result here is a finding of political disparity. While Table 7 suggests in-party supporters were treated differently than out-party supporters, the far stronger and underlying relationship is the difference between the treatment of Democrats and Republicans. We see in Table 8 that, overall, there is a distinct relationship such that each additional extra split imposed on a county is associated with a higher level of Democratic support (or, concomitantly, a lower level of Republican support). We see in Tables 9 and 10 that this disparity is not necessarily or entirely a function of adversarial politics, as lines drawn by Republicans, Democrats, and both parties all imposed greater county splits on Democrats. Whether measured by the mean vote of split counties or the mean splits of Democratic counties, the disparity is unmistakable. The exception to this finding is the treatment of partisanship by states with independent mapmaking bodies. Here the distinctions in party support do not rise to the level of statistical significance.

Why would both Republicans and Democrats split Democratic voters more? It is a subject surely worthy of in-depth study. For our purposes, whether the parties split Democrats because of opposing strategies of how to maximize their seats won or for other reasons, what is notable to this inquiry is the strength of the evidence here that citizens, based on their political views, suffered the representational burden of living in fractured counties.

5.   County Splits and the Nature of Gerrymandering

Who is affected by gerrymandering? It is a contentious question for the courts, litigants, and academics. These data offer one straightforward response. Approximately 154.8 million Americans, the majority of the residents of thirty-five states, live in a county that has been unnecessarily split into extra congressional districts. They are affected by gerrymandering.

But the ubiquity of this representational burden does not mean Americans are equally likely to have their county unnecessarily split into pieces. In statistically unlikely patterns, suggesting purposefulness and not happenstance, we find that Black residents are more likely to have their home counties unnecessarily split into pieces. We find this relationship in overall numbers and in states where Republicans or both parties drew the lines.

We find too that Democrats are more likely to have their home counties unnecessarily split into pieces. We find this relationship in the overall numbers, and, curiously, in states where Republicans, both parties, and Democrats themselves drew the lines.

The potential for building upon this simple measure—the unnecessary splitting of counties—to better understand gerrymandering is suggested not only in these patterns but also in the complementary nature of this measure with other indicators of gerrymandering currently in use. When we calculated the correlation between the mean number of unnecessary county splits

imposed per state and compactness (r = -0.359)[196] and the efficiency gap (r = 0.417)[197] we found stronger relationships between our measure and those traditional indicators than exist between compactness and the efficiency gap themselves (r = -0.139). In other words, while compactness and the efficiency gap offer two very different means and often conflicting assessments of gerrymandering, county splits represent a measure tied to both results.

III. Implications & Conclusion

Any proposal for measuring gerrymandering has at least three distinct potential applications: a policy prescription for mapmakers, an analytical tool for scholars, and a legal test for litigants and jurists. We aspire to develop a theory of geographic gerrymandering that can be useful in all three respects. Below we briefly discuss the value of our approach in these various areas.

Our approach offers a new tool for scholars in the field of electoral districting analysis. Grofman and Cervas predict that "[t]he concept of community of interest will be of even greater relevance in the 2020 round of districting than in the past,"[198] because more states have codified this geographic criterion.[199] And so they emphasize the "need to put operational content into the abstract and multivocal concept of community of interest, a concept which still is undertheorized, especially in the legal context."[200] Our approach contributes to this effort by thinking about the geographic distribution of the representational benefits associated with districts that correspond to cognizable and coherent territorial communities of interest.

The value of geographic representation has been recognized in scholarship, districting criteria, and legal doctrine.[201] But the traditional geographic approach considers the absolute value of geographic representation: does this map, overall, enhance or frustrate geographic representation? We ask a different question: how does this map distribute geographic impacts? A map that uniformly frustrates geographic representation statewide represents bad

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[196] Compactness scores were derived from an analysis created by the consulting firm Azavea by calculating the mean result produced by several scholarly formulas for calculating compactness. *See* Azavea, *Redrawing the Map on Redistricting* (2012), https://cdn.azavea.com/com.redistrictingthenation/pdfs/Redistricting_The_Nation_Addendum.pdf [https://perma.cc/2XH6-HBK7].

[197] Efficiency gap scores by state were derived from an analysis published by the Brennan Center for Justice. *See* Laura Royden & Michael Li, *Extreme Maps*, Brennan Ctr. for Justice (2017), https://www.brennancenter.org/sites/default/files/publications/Extreme%20Maps%205.16_0.pdf [https://perma.cc/W8ZL-AALG].

[198] Bernard Grofman & Jonathan Cervas, *ZIP Codes as Geographic Bases of Representation*, Election L.J., 14 (forthcoming 2020) (emphasis omitted), http://jonathancervas.com/2020/zipcodes/ZIP.pdf [https://perma.cc/3YX7-458F].

[199] *Id.* at 14–15 n.25–26 (emphasis omitted) (citing Grofman, *supra* note 81, at 177; Nat'l Conf. of State Legislatures, *Redistricting Law 2020* (2019) (the number of states with an explicit "community of interest" criterion has increased from eight in 1985 to twenty-six today)).

[200] *Id.* at 1 (emphasis omitted).

[201] *See supra* Section II.A.2.

policy.[202] A map that selectively frustrates geographic representation for groups defined by race or party represents something worse: a fairness problem, potentially of constitutional dimension.[203]

Our focus on geographic unfairness, rather than seats-votes unfairness or absolute satisfaction of geographic criteria, provides both methodological and conceptual benefits. The seats-votes framework depends on a series of assumptions: that each district race is a head-to-head contest between one candidate from each of the two major political parties; that district-based candidate contests are essentially statewide party contests; that vote swings occur in a uniform or proportional way. It also requires a series of methodological choices: whether to use data from legislative or statewide elections; how to account for uncontested or lightly contested districts; whether to use uniform or proportional swing; whether to use all-or-nothing or fractional seats; whether to measure bias, responsiveness, or both; how to produce an ensemble of neutral maps. The geographic approach is less reliant on these assumptions and choices, which makes it easier to apply in a broad range of contexts. For example, many districted elections for local bodies like city councils, county commissions, and school boards are non-partisan, feature successful independent or third-party candidates, or involve multiple candidates with the same party affiliation. It is hard to apply the seats-votes framework in this context. But the geographic approach can still provide guidance and insights.

And the geographic approach offers conceptual insights that lie outside the seats-votes framework, as our data analysis demonstrates. Within the seats-votes framework, a bipartisan gerrymander is fair because it carves up the state into an appropriate number of red and blue districts. But our geographic analysis demonstrates that this seats-votes fairness may be achieved through geographic unfairness, like disproportionate extra county splits for

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[202] Consider two conceptual extremes. First imagine a state whose residents live exclusively in ten equipopulous areas with consolidated city-county governments. Suppose the state made each such area a single-member congressional district. In terms of geographic representation, this would be great for everyone. On the other end of the spectrum, imagine a state that divided its population into ten noncontiguous "crazy-dust" districts, assigning voters to district by birthdate. *Compare* Baker v. Carr, 369 U.S. 186, 254 (1962) (Clark, J., concurring) (contending that "Tennessee's apportionment is a crazy quilt without rational basis"), *with* Ljubiša M. Kociæ & Alba C. Simoncelli, *Cantor Dust by AIFS*, 15 Filomat 265, 271 (2001) (defining "dust" mathematically as "a totally disconnected" set of points). In terms of geographic representation, this would be horrible for everyone. In real-world examples, an electoral map achieves some intermediate level of success in terms of geographic representation, but the geographic benefits and burdens of the map may not be uniformly distributed.

[203] Note that the distinction between the absolute extent and the fair distribution of geographic representational benefits reflects a distinction between the seats-votes framework and geographic representation. The seats-votes framework is inescapably distributional, a zero-sum game where one party's gain is the other's loss. An electoral map cannot give everyone a high level of partisan power, or everyone a low level of partisan power. The map can only reallocate power from one party (or racial group) to the other. But geographic representation need not be a zero-sum game. Better geographic representation in one district does not require worse geographic representation in another. An electoral map can uniformly enhance geographic representation, or uniformly frustrate it.

Black residents and Democrats. While partisan fairness does not guarantee geographic fairness, geographic fairness may limit partisan unfairness. Note that Hofeller, while drawing the 2016 North Carolina congressional map challenged in *Rucho*, used a partisan index to determine when and where to split counties. Specifically, Hofeller used an aggregate partisanship variable for each census block, based on seven statewide races between 2008 and 2014, to color-code the "two-party partisan characteristics" of counties, precincts, and census units called VTDs, and to make the nitty-gritty decisions: "to assign a VTD to one congressional district or another," "whether and where to split VTDs or counties," and the "placement of district lines within split counties."[204] This suggests that partisan mapmakers use geographic unfairness instrumentally to achieve the constitutive goal of seats-votes unfairness. Limits on geographic unfairness may also limit seats-votes unfairness. But we do not propose geographic fairness as a purely instrumental tool to achieve seats-votes fairness. Rather, we view both geographic fairness and seats-votes fairness as important values. Thinking of fairness in two-dimensional terms provides a richer understanding of representational interests.

Our approach suggests straightforward policy prescriptions. Many districting criteria proposed by scholars and used by states are geographic: cognizability; traversability; coherence; contiguity; compactness; coterminality with other electoral district boundaries; congruence with local boundaries, census boundaries, and communication units (like zip code areas and media markets); and district office access.[205] Some of these criteria, like contiguity, can be satisfied completely. For other criteria, like congruence with local boundaries, only partial satisfaction is possible, because complete satisfaction is inconsistent with superseding criteria like population equality. For geographic criteria that can only be partially satisfied, the focus is usually on the absolute degree of satisfaction statewide. For example, Colorado directs it redistricting commission to preserve counties "[a]s much as is reasonably possible."[206] This focus on the absolute degree of statewide satisfaction of aspirational geographic criteria seeks to maximize the total representational benefit associated with the criteria. But this focus on benefit maximization ignores the question of benefit distribution. Our approach encourages mapmakers to draw maps that distribute geographic representational benefits fairly. Districting criteria can and should reflect this. Specifically, districting law can instruct the mapmaker that any departure from districting

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[204] Common Cause v. Rucho, 318 F. Supp. 3d 777, 808 (M.D.N.C. 2018), *rev'd*, 139 S. Ct. 2484 (2019). VTD standards for Voting Tabulation District, which is defined by the Census Bureau as "[a]ny of a variety of areas, such as election districts, precincts, or wards, established by states and local governments for purposes of conducting elections." *Glossary: Voting District (VTD)*, U.S. CENSUS BUREAU, https://www.census.gov/glossary/#term_VotingDistrictVTD [https://perma.cc/A4R4-76LB].

[205] *See supra* notes 72–88 & accompanying text.

[206] COL. REV. STAT. 44.3(2)(a) ("As much as is reasonably possible, the commission's [congressional redistricting] plan must preserve. . .whole political subdivisions, such as counties. . .").

criteria requires two factual determinations: (1) that the departure is necessary to comply with superseding criteria; and (2) that the departure does not unnecessarily impose a disparate adverse impact on any group defined by race or party. These factual determinations could be subject to appropriate judicial review.

Our approach's potential legal application warrants clarification, given the Supreme Court's recent decision in *Rucho* on the non-justiciability of partisan gerrymandering claims in federal courts. Measures of geographic fairness can support a legal theory of racial or partisan gerrymandering based on equal protection or First Amendment principles. Under this theory, an electoral map is unlawful when it unjustifiably distributes geographic representational impacts on the basis of a protected characteristic like race or an expressive activity like party affiliation.[207] The *Reynolds* Court spoke of a right to "fair and effective" representation.[208] The fairness piece of this equation is better suited to legal adjudication than the effectiveness piece. Decades ago, Grofman suggested that a map violated substantive due process when it reached an extreme level of non-cognizability.[209] But Grofman himself observes that this proposal has not caught on.[210] More generally, Grofman has noted the limited success of legal challenges based on a map's departure from geographic criteria like compactness, preservation of local political boundaries, and correspondence with a community of interest. Given interpretive ambiguities and the tradeoffs districting entails, courts generally defer to the mapmaker absent an extreme departure.[211] In *Vieth*, the Court rejected the plaintiffs claim that the Pennsylvania legislature violated the Constitution when it "ignored all traditional redistricting criteria, includ-

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[207] We are presently agnostic about whether this legal standard should have an intent element independent of a justification element. Actors generally intend the predictable effects of their choices unless such effects are unavoidable in the sense that independent objectives cannot be accomplished without them. Nagle & Ramsay, *supra* note 39, at 2 ("[U]nintentional bias is no longer unintentional if it can be reliably demonstrated that it occurs."); *Rucho*, 139 S. Ct. at 2504 (suggesting intent and justification elements are duplicative). For this reason, a mapmaker intends a map's predictable distribution of geographic representational impacts unless other sufficient weighty districting criteria necessitate the distribution.

[208] Reynolds v. Sims, 377 U.S. 533, 566 (1964).

[209] Grofman declaration in Pope v. Blue, 809 F. Supp. 392 (W.D.N.C. 1992); Grofman, *supra* note 66.

[210] Grofman & Cervas, *supra* note 198, at 3–4 ("A clear operational test for cognizability has yet to be developed and unfortunately, in our view, the concept of non-cognizability never gained any legal traction in federal case law."). The trial court dismissed the complaint, and implicitly Grofman's theory of non-cognizability, but the same district was struck down by the Supreme Court as a racial gerrymander shortly thereafter. *Compare* Pope v. Blue, 809 F. Supp. 392 (W.D.N.C. 1992), *with* Shaw v. Reno, 509 U.S. 630 (1993).

[211] Grofman, *supra* note 80, at 86 & n.43 ("Courts have generally required dramatic departures from compactness in a number of districts before invalidating a plan for noncompliance with a compactness standard."); *id.* at 86–87 & n.45 ("[C]ourts have generally allowed legislatures wide latitude in determining what is reasonable . . . ."); *id.* at 87 & n.49 ("In practice, provisions which require preservation of communities of interest are hard to enforce because they are hard to interpret.").

ing the preservation of local government boundaries," to favor Republicans.[212]

Courts have been reluctant to adjudicate traditional claims of partisan gerrymandering based on a seats-votes conception of fairness. In *Rucho*, the Supreme Court decided, five to four, that such claims present non-justiciable political questions beyond the reach of the federal courts. As litigation has shifted to state courts, courts have encountered some of the same justiciability problems identified by the *Rucho* majority. The legal claim we propose is similar to the vote dilution theory the Court rejected in *Rucho*. However, traditional vote dilution theory frames in seats-votes terms the harm alleged (too few seats) and the relief sought (more seats). Our approach frames in geographic terms the harm alleged (*e.g.*, disproportionate county splits) and the relief sought (*e.g.*, more equitable county splits). This geographic framing avoids many of the justiciability problems the *Rucho* majority attributes to traditional seats-votes dilution claims. For this reason, one of us recently argued that *Rucho* is best read narrowly to foreclose only partisan gerrymandering claims based on a seats-votes dilution theory, leaving the federal courts open to other claims like those based on geographic unfairness.[213] The entire thrust of the *Rucho* majority opinion, the very logic of its justiciability analysis, applies to seats-votes measures but not geographic ones. Consider how Chief Justice Roberts described a partisan gerrymandering claim in his opinion for the *Rucho* majority. It "rest[s] on an instinct that groups with a certain level of political support should enjoy a commensurate level of political power and influence."[214] It deems "a districting map . . . unconstitutional because it makes it too difficult for one party to translate statewide support into seats in the legislature."[215] It reflects a "'norm that does not exist' in our electoral system—'statewide elections for representatives along party lines.'"[216] It asks the federal courts to "apportion political power"[217] by "tak[ing] the extraordinary step of reallocating power and influence between political parties."[218] It is based on the principle "that a person is entitled to have his political party achieve representation in some way commensurate to its share of statewide support"[219] and that "each party must be influential in proportion to its number of supporters."[220]

All of these assertions describes a seats-votes dilution claim to a tee and a geographic unfairness claim not at all. Under the geographic theory we

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[212] *Vieth v. Jubelirer*, 541 U.S. 267, 3272–73 (2004) (plurality opinion) (alteration incorporated).

[213] Benjamin Plener Cover, Rucho *for Minimalists*, 71 Mercer L. Rev. 695 (2020).

[214] *Rucho v. Common Cause*, 139 S. Ct. 2484, 2499 (2019)

[215] *Id.*

[216] *Id.* (quoting Davis v. Bandemer, 478 U.S. 109, 159 (1986) (O'Connor, J., concurring in the judgment)).

[217] *Id.*

[218] *Id.* at 2502.

[219] *Id.* at 2501.

[220] *Id.*

propose, a court can adjudicate the claim and craft relief without saying a word about the relationship between seats and votes. Geographic representation cannot be rejected as a subjective norm inconsistent with the theoretical underpinnings and traditional practices of the American electoral system. Geographic representation reflects the traditional practices and the representational theory underlying the American electoral system. The predominance of electoral geographic districting, both historically and today, indicates its significance. The states themselves demonstrate the value they accord to geographic representation by adopting districting criteria designed to promote it. The geographic theory does not seek to impose geographic norms on states that reject them. The geographic theory defers to the judgments of states that geographic districting confers meaningful representational benefit and simply demands that the state fairly distribute the benefits it values without intentionally discriminating on the basis of race or party.

For these reasons, *Rucho* is best read narrowly to foreclose only seats-votes claims, leaving the federal courts open to the geographic claim we propose. Under this reasoning, the Court could strike down an electoral map as a "geographic" partisan gerrymander without overruling *Rucho*, and without relying on a seats-votes theory when adjudicating liability or crafting relief. But even if *Rucho* is read broadly to foreclose the geographic claim we propose, our geographic approach may still help litigants and jurists in state courts adjudicating gerrymandering claims under state constitutional provisions.

This proposed legal standard differs from the traditional seats-votes dilution standard in one other notable respect. The two standards swap the respective roles of seats-votes and geographic considerations. Under the traditional standard, seats-votes unfairness is the plaintiff's complaint, and geographic considerations may be the mapmaker's defense. Under our geographic standard, geographic unfairness is the plaintiff's complaint, and seats-votes considerations may be the mapmaker's defense. This distinction is significant for at least two reasons. First, a mapmaker could respond to a claim of seats-votes gerrymandering by invoking geography itself, arguing that the seats-votes relationship is a product of the underlying political geography (like the clustering of Democrats in urban areas) and the consistent application of legitimate criteria (including geographic criteria like contiguity, compactness, and congruence with local boundaries).[221] In contrast, it is harder for the mapmaker to invoke geography as a defense against a claim of geographic gerrymandering, because the gravamen of the claim is that important geographic districting criteria were applied inconsistently.[222]

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[221] Nagle & Ramsay, *supra* note 39, at 3 ("Political geography, such as high density of Democrats in cities, can also create unfair and unresponsive maps when conventional redistricting criteria such as compactness and not splitting political subdivisions are adhered to.").

[222] Harder, but not impossible. The mapmaker could attribute the inconsistent application itself to the underlying political geography and a reasonable, good-faith attempt to reconcile competing districting criteria.

The mapmaker could instead respond to a claim of geographic gerrymandering by invoking political districting criteria. This leads to the second reason why the role reversal of geographic and seats-votes considerations is significant. In *Gaffney*, the Court concluded that the Connecticut legislature properly relied on political considerations when it drew a bipartisan gerrymander based on principles of partisan fairness and rough seats-votes proportionality.[223] Relying on *Gaffney*, the *Rucho* majority claimed that partisan advantage is a constitutionally permissible districting criterion, so long as it is not pursued excessively.[224] In doing so, the *Rucho* majority elided the obvious difference between an objective of partisan fairness and an objective of partisan advantage, and dismissed powerful arguments that the latter supplies no legitimate basis for official action.[225] Our geographic approach would invite the Court to revisit the distinction between partisan fairness and partisan advantage in a new doctrinal setting. The question would not be whether a motivation is itself so illicit that it renders a map unconstitutional without any showing of adverse effect. Instead, the question would be whether that motivation can justify a demonstrated adverse effect in the form of disparate treatment on the basis of race or party in the distribution of geographic representational impacts. The distinction between partisan fairness and partisan advantage may matter for this new doctrinal question, even if the *Rucho* majority elided it when answering the first doctrinal question.[226]

This Article was designed to present the concept of geographic districting and demonstrate its significance by showing how current congressional maps distribute the burden of extra county splits on the basis of race and party. These results suggest additional research questions that we encourage others, and hope ourselves, to explore in the future. One avenue is to analyze other geographic burdens. Recently, scholars have suggested other districting criteria worthy of exploration, based on such geographic factors as zip codes, homeowners' associations, school catchment areas, and media markets.[227]

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[223] Gaffney v. Cummings, 412 U.S. 735, 753 (1973).

[224] *Rucho*, 139 S. Ct. at 2503.

[225] *Id.* at 2517 (Kagan, J., dissenting); *see also*, Karcher v. Daggett, 462 U.S. 725, 748 (1983) (Stevens, J., concurring); Michael S. Kang, *Gerrymandering and the Constitutional Norm Against Government Partisanship*, 116 Mich. L. Rev. 351 (2017); Justin Levitt, *Intent Is Enough: Invidious Partisanship in Redistricting*, 59 Wm. & Mary L. Rev. 1993 (2018); Michael Parsons, *Clearing the Political Thicket: Why Political Gerrymandering for Partisan Advantage Is Unconstitutional*, 24 Wm. & Mary Bill Rts. J. 1107 (2016).

[226] If instead the Court concludes that neither partisan fairness nor partisan advantage supplies adequate justification for disparate geographic treatment, then a so-called bipartisan gerrymander, which carves the state up into safe red and safe blue districts, may be challenged if it unfairly distributes geographical representational impacts on the basis of party or race.

[227] *Compare* Curiel & Steelman, *supra* note 138, and John A. Curiel & Tyler Steelman, *A Response to "Tests for Unconstitutional Partisan Gerrymandering in a Post-Gill World" in a Post-Rucho World*, 19 Election L.J. 101 (2020), *with* Bernard Grofman, *Tests for Unconstitutional Partisan Gerrymandering in a Post-Gill World*, 18 Election L.J. 93 (2019), and Grofman & Cervas, *supra* note 198; *see also*, *e.g.*, *id.* at 6 n.12 (homeowner's association); *id.* at 6 n.14 (school catchment area); *id.* at 12 (media markets).

Along with co-author Michael Solimine, we recently analyzed the distance between a voter's residence and a congressional representative's district office.[228] Another inquiry concerns the relationship between geographic and seats-votes measures. Most important is the project of translating the insights of the geographic approach into tools that assist scholarly, policy, and legal efforts

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[228] Niven et al., *supra* note 70.