COMMUNITIES AND THE CALIFORNIA COMMISSION

Nicholas O. Stephanopoulos*

INTRODUCTION

In most respects, the redistricting initiatives that California's voters approved in 2008 and 2010 were standard good-government fare.[1] As reformers had long advocated, the measures withdrew the power of drawing district lines from the State Legislature, and entrusted it to a new Citizens Redistricting Commission.[2] Also consistent with many earlier proposals, the measures set forth a specific set of criteria pursuant to which districts subsequently would be drawn. These criteria unsurprisingly included equal population, compliance with the Voting Rights Act, contiguity, compactness, and respect for political subdivisions (such as towns and counties) and communities of interest.[3]

What *was* unusual about the California initiatives was that they explicitly ranked these criteria—and, even more so, that they ranked subdivision and community preservation so high. After two provisions that duplicate existing

* Associate-in-Law, Postdoctoral Research Scholar, and Lecturer-in-Law, Columbia Law School. My thanks to Bruce Cain, Heather Gerken, Bernie Grofman, Michael Kang, Vladimir Kogan, Todd Makse, Eric McGhee, and Nate Persily, as well as the participants in the Redistricting in the 2010s symposium, for all of their helpful comments.

1. *See* TEXT OF PROPOSED LAWS: PROPOSITION 11, CALIFORNIA GENERAL ELECTION VOTER INFORMATION GUIDE 137-40 (2008), *available at* http://voterguide.sos.ca.gov/past/2008/general/text-proposed-laws/text-of-proposed-laws.pdf#prop11; TEXT OF PROPOSED LAWS: PROPOSITION 20, CALIFORNIA GENERAL ELECTION VOTER INFORMATION GUIDE 95-99 (2010), *available at* http://cdn.sos.ca.gov/vig2010/general/pdf/english/text-proposed-laws.pdf. Proposition 11 applied to state legislative redistricting, while Proposition 20 applied to congressional redistricting.

2. The Commission is carefully designed to be insulated from political influence. Its fourteen members are selected from the public at large through an elaborate procedure administered by the State Auditor. *See* TEXT OF PROPOSED LAWS: PROPOSITION 11, *supra* note 1.

3. *See* CAL. CONST. art. XXI, § 2(d).

federal obligations,[4] as well as the relatively trivial requirement of contiguity,[5] the next most important criterion is that "[t]he geographic integrity of any city, county . . . local neighborhood, or local community of interest shall be respected in a manner that minimizes [its] division."[6] While many states have similar requirements on their books,[7] the California Constitution is unique in the premium that it now places on subdivision and community preservation. It is unique in clearly prioritizing this criterion—aimed at making districts more coherent and thus improving voter participation and the quality of representation—over values such as compactness, competition, and partisan fairness.[8]

Since the Commission finalized its inaugural set of district plans in August 2011, scholars have analyzed its performance along multiple dimensions. They have found, among other things, that the Commission-crafted districts are more compact, split fewer towns and counties, provide greater representation to minority groups, and are more competitive than their legislatively drawn predecessors.[9] However, there has been no effort to date to determine how congruent the Commission's districts are with communities of interest (as opposed to political subdivisions). As the authors of one study candidly admit, "Because it is difficult to establish a systematic definition of a community of interest, we do not attempt to evaluate the plans on that dimension."[10] Nor, for the same reason, do there exist earlier studies appraising any other states' efforts to comply with community preservation requirements.[11]

In this Article, then, I aim to assess quantitatively how closely the old and new California districts correspond to geographic communities of interest. I do

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4. *See id.* § 2(d)(1)-(2) (requiring district equipopulation and compliance with the Voting Rights Act).

5. *See id.* § 2(d)(3).

6. *Id.* § 2(d)(4).

7. *See* NATIONAL CONFERENCE OF STATE LEGISLATURES, REDISTRICTING LAW 2010, at 125-27 (2009) [hereinafter NCSL REPORT] (forty-four states have subdivision preservation requirements and twenty-one have community preservation requirements).

8. *See* Bruce E. Cain, *Redistricting Commissions: A Better Political Buffer?*, 121 YALE L.J. (forthcoming 2012) (manuscript at 8) (on file with author) ("[T]he geographic community of interest (GCOI) criterion was given much more emphasis [in the California initiatives] than in the past.").

9. *See* Vladimir Kogan & Eric McGhee, Redistricting California: An Evaluation of the Citizens Commission Final Plans (Sept. 13, 2011) (unpublished manuscript) (on file with author); *see also* Cain, *supra* note 8.

10. Kogan & McGhee, *supra* note 9, at 15; *see also* BRUCE E. CAIN ET AL., COMPETITION AND REDISTRICTING IN CALIFORNIA: LESSONS FOR REFORM 3 (2006) ("[W]e did not use the Community of Interest criterion in our exercise because it is difficult to impossible to implement without public testimony.").

11. Two studies that sought to *draw* districts based on quantitative evidence about the location of communities of interest are MAPPING COMMUNITIES OF INTEREST: THE REVISED PLAINTIFFS' SENATE PLAN (2001) (on file with author), and Todd Makse, Defining "Communities of Interest" in Redistricting Through Initiative Voting (July 5, 2011) (unpublished manuscript) (on file with author). However, neither of these studies attempted to *assess* how closely individual districts correspond to geographic communities.

so using a concept, "spatial diversity," that I introduced in a previous work of mine.[12] Spatial diversity refers to the heterogeneity of a larger entity's geographic subunits with respect to some variable of interest. For example, an entity is spatially diverse, in terms of income, if some of its subunits are rich, some are middle-class, and some are poor. But the entity is spatially homogeneous if most of its subunits feature the same income profile (whatever that may be). The connection between spatial diversity and the community-of-interest criterion is that highly spatially diverse districts tend to combine different geographic communities, while districts that are highly spatially uniform tend to coincide with a single community.

I employ two different kinds of data in my analysis. First, as in my earlier work, I rely on a wide array of demographic and socioeconomic information from the American Community Survey (ACS), covering vital areas such as race, ethnicity, age, income, education, profession, marital status, and housing. Second, I take advantage of California's frequent popular initiatives (PI), which enable voters to voice their policy preferences on a host of important issues: taxes, spending, crime, abortion, energy, the environment, government reform, etc. For both sets of data, I use a technique known as factor analysis to collapse the raw variables into a much smaller number of composite factors. These factors capture much of the data's original variance and reveal which raw variables, in which combinations, best explain California's residential patterns. The factors are also the inputs for all of my spatial diversity calculations.

The Article's principal finding is that, by a variety of metrics, California's new assembly, senate, and congressional districts are more congruent with geographic communities of interest than their predecessors. Their average levels of spatial diversity are lower, with respect to both the ACS and PI factors. There are fewer districts with extremely high spatial diversity scores, particularly in terms of the ACS factors. And at the congressional level and in terms of the ACS factors (for which interstate comparisons are possible), California's new districts rank nineteenth in the country in adjusted spatial diversity instead of fifth. This is persuasive evidence that the Commission indeed complied with its mandate to respect the integrity of geographic communities. But there is also reason to think that the Commission could have done an even better job, especially vis-à-vis the assembly plan and the PI factors.

The Article complements these results with a series of vignettes that identify both areas where the Commission was able to raise dramatically the level of district-community congruence, and areas where it seems to have fallen short. For example, one existing congressional district combines gritty portions of the San Fernando Valley with affluent locales such as Beverly Park and Sherman Oaks. This district's more spatially homogeneous successor, in contrast, retains its Valley core but then swells to the north, east, and west instead of veering

12. *See* Nicholas O. Stephanopoulos, *Spatial Diversity*, 125 HARV. L. REV. 1903 (2012).

south into Los Angeles's tonier precincts. On the other hand, the compact African-American community in South L.A. is divided between three districts under both the old and new congressional plans. The Commission appears to have missed an opportunity to create a spatially homogeneous district congruent with this minority community.

The Article proceeds as follows: Part I describes California's history with the community-of-interest criterion (which long predates the 2008 and 2010 initiatives). Part II explains the methodology that I use to analyze how closely districts correspond to geographic communities. Finally, Part III presents my key empirical findings—both for the state as a whole and for particular regions.

I. THE COMMUNITY-OF-INTEREST CRITERION

The requirement that districts coincide with geographic communities of interest did not materialize out of thin air in California's 2008 and 2010 redistricting initiatives. To the contrary, the criterion has a rich history, in both case law and earlier initiatives, stretching back almost forty years. In this Part, I briefly summarize this history, which is essential for understanding how district-community congruence came to achieve such prominence in California's current district-drawing process.

In the 1970s round of redistricting, the first after the one person, one vote revolution of the 1960s, California's Democratic-controlled Legislature was unable to agree on district plans with Republican Governor Ronald Reagan.[13] The California Supreme Court therefore was forced to intervene, appointing three Special Masters to devise plans for the Assembly, the Senate, and the state's congressional delegation.[14] In the report that accompanied their plans, the Masters described in detail the criteria that they employed. One of the most important of these criteria was respect for communities of interest:

> The social and economic interests common to the population of an area which are probable subjects of legislative action, generally termed a "community of interests," should be considered in determining whether the area should be included within or excluded from a proposed district in order that all of the citizens of the district might be represented reasonably, fairly and effectively. Examples of such interests, among others, are those common to an urban area, a rural area, an industrial area or an agricultural area, and those common to areas in which the people share similar living standards, use the same transportation facilities, have similar work opportunities, or have access to the same media of communication relevant to the election process.[15]

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13. *See* Legislature v. Reinecke, 10 Cal. 3d 396, 399-400 (1973); J. Morgan Kousser, *Redistricting: California, 1971-2001*, *in* GOVERNING CALIFORNIA: POLITICS, GOVERNMENT, AND PUBLIC POLICY IN THE GOLDEN STATE 155, 157 (Gerald C. Lubenow ed., 2006).

14. *See Reinecke*, 10 Cal. 3d at 401.

15. *Id.* at 412 (internal citations omitted).

In its 1973 decision upholding the Masters' plans, the California Supreme Court lauded their "over-all reasonableness and excellence."[16] The Court also noted that "there is broad agreement that the . . . criteria [used by the Masters] are appropriate," and that "legislators and congressmen affected thereby, many amici curiae, and others who have expressed themselves" all approved of the plans.[17] Scholars concurred that the Masters' districts were geographically compact, fair to both major parties, responsive to changes in public opinion, and conducive to minority representation.[18] And California's voters embraced several of the Masters' criteria (though not the community preservation requirement) in a legislatively referred 1980 initiative.[19]

In contrast to this success story, California's redistricting experience in the 1980s was a debacle (except from the perspective of Democratic partisans). In full control of the state government, Democrats managed to implement a set of egregious gerrymanders—though only after their initial efforts were thwarted by a popular referendum,[20] and their subsequent plans spawned litigation that made it to the United States Supreme Court.[21] So great was the public's dissatisfaction that *five* separate initiatives aimed at reforming the state's redistricting process garnered enough signatures to make it onto the ballot.[22] While none of these measures became law, four would have compelled districts to respect the boundaries of census tracts, cities, counties, and/or geographic regions.[23]

In the 1990s, California's elected branches deadlocked again, and the California Supreme Court once more stepped into the breach, appointing three new Special Masters to formulate district plans.[24] These Masters employed the same redistricting criteria as their 1970s forerunners—including precisely the same definition of the communities of interest to which districts were required to cor-

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16. *Id.* at 404.

17. *Id.* at 402, 404.

18. *See* Gordon E. Baker, *Lessons from the 1973 California Masters' Plan*, *in* POLITICAL GERRYMANDERING AND THE COURTS 296, 301-08 (Bernard Grofman ed., 1990); Thomas Hofeller & Bernard Grofman, *Comparing the Compactness of California Congressional Districts Under Three Different Plans: 1980, 1982, and 1984*, *in* POLITICAL GERRYMANDERING AND THE COURTS, *supra*, at 281, 284-86; Kousser, *supra* note 13, at 157-59; GEORGE PASSANTINO, REDISTRICTING IN CALIFORNIA: COMPETITIVE ELECTIONS AND THE EFFECTS OF PROPOSITION 11, at 12-13 (2008).

19. *See California Ballot Propositions, 1980-1989*, L.A. LAW LIBRARY, http://www.lalawlibrary.org/research/ballots/1980/1980.aspx (last visited Feb. 29, 2012); *see also* CAL. CONST. art. XXI, § 1(e) (amended 2008) (requiring respect for "geographical integrity of any city, county, or city and county, or of any geographical region").

20. *See* Nicholas O. Stephanopoulos, *Reforming Redistricting: Why Popular Initiatives to Establish Redistricting Commissions Succeed or Fail*, 23 J.L. & POL. 331, 360 (2007).

21. *See* Badham v. Eu, 488 U.S. 1024 (1989).

22. *See* ALAN HESLOP, REDISTRICTING REFORM IN CALIFORNIA 1-5 (2003); Kousser, *supra* note 13, at 161-64; Stephanopoulos, *supra* note 20, at 360-68.

23. *See* HESLOP, *supra* note 22, at 1-5.

24. *See* Wilson v. Eu, 823 P.2d 545, 547-48 (Cal. 1992).

respond.[25] The Masters also explained that the "values expressed in the concept of . . . community of interest" include "the ability of citizens to relate to each other and their representatives" and "the ability of representatives to relate effectively to their constituency."[26] As in the 1970s, the California Supreme Court effusively praised the Masters' "expertise in the art of reapportionment,"[27] and outside observers commended the plans for their "remarkable number of competitive districts."[28]

The new millennium brought with it another gerrymander, though this time of the bipartisan variety. While Democrats controlled both the Legislature and the Governorship in 2001, they feared igniting a 1980s-style firestorm if they enacted plans designed to maximize their partisan advantage.[29] They therefore struck a deal with the Republicans that sought to protect incumbents of *both* parties from any electoral threat. The result was a shockingly low level of competition: in the 2004 election, for example, not a single assembly, senate, or congressional seat changed hands.[30] Largely because of this political paralysis, new Republican Governor Arnold Schwarzenegger campaigned heavily on behalf of a 2005 redistricting initiative. While it failed at the polls (like its 1980s antecedents), it too would have barred the unnecessary splitting of cities and counties.[31]

The tide finally turned for reformers in 2008, when Proposition 11 squeaked through by less than two points.[32] In addition to creating the Citizens Redistricting Commission, the measure specified that respect for political subdivisions and communities of interest henceforth would be the most important district-drawing criterion after equal population, compliance with the Voting Rights Act, and geographic contiguity.[33] "The geographic integrity of any city, county . . . neighborhood, *or community of interest* shall be respected to the ex-

25. *See id.* at 573 (quoting Legislature v. Reinecke, 10 Cal. 3d 396, 412 (1973)).

26. *Id.* at 574-75.

27. *Id.* at 559.

28. DOUGLAS JOHNSON, COMPETITIVE DISTRICTS IN CALIFORNIA: A CASE STUDY OF CALIFORNIA'S REDISTRICTING IN THE 1990S, at 7 (2005); *see also* PASSANTINO, *supra* note 18, at 11-13. *But see* Kousser, *supra* note 13, at 166-67 (arguing that 1990s plans favored Republicans).

29. *See* Kogan & McGhee, *supra* note 9, at 4.

30. *See* CAIN, *supra* note 10, at 12; JOHNSON, *supra* note 28, at 8; PASSANTINO, *supra* note 18, at 11-13.

31. *See* Stephanopoulos, *supra* note 20, at 371-74.

32. *See* Votes for and Against November 4, 2008 State Ballot Measures, CALIFORNIA SECRETARY OF STATE, http://www.sos.ca.gov/elections/sov/2008_general/7_votes_for_against.pdf (last visited Feb. 29, 2012). For an analysis of why the measure prevailed, see Nicholas O. Stephanopoulos, *A Fighting Chance for Redistricting*, L.A. TIMES, Sept. 27, 2008, at A21, and Vladimir Kogan & Thad Kousser, Great Expectations and the California Citizens Redistricting Commission (unpublished manuscript).

33. *See* TEXT OF PROPOSED LAWS: PROPOSITION 11, *supra* note 1.

tent possible . . . . Communities of interest shall not include relationships with political parties, incumbents, or political candidates."[34]

Two years later, California's voters endorsed a second redistricting initiative, Proposition 20, by more than twenty points.[35] This measure both added congressional districts to the Commission's purview and revised Proposition 11's section on communities of interest.[36] The new definition read as follows:

> The geographic integrity of any city, county, city and county, local neighborhood, or local community of interest shall be respected in a manner that minimizes their division to the extent possible . . . . A community of interest is a contiguous population which shares common social and economic interests that should be included within a single district for purposes of its effective and fair representation. Examples of such shared interests are those common to an urban area, a rural area, an industrial area, or an agricultural area, and those common to areas in which the people share similar living standards, use the same transportation facilities, have similar work opportunities, or have access to the same media of communication relevant to the election process. Communities of interest shall not include relationships with political parties, incumbents, or political candidates.[37]

This language, of course, was drawn almost verbatim from the reports of the 1970s and 1990s Special Masters.[38] In fact, the consensus that the Masters had done quite a good job drawing California's districts—but that the elected branches had performed poorly in the 1980s and 2000s—was precisely why Proposition 20 copied the Masters' approach. As demographer Anthony Quinn has noted, "The authors of Propositions 11 and 20 were well aware of the . . . Masters' criteria," and "incorporated the language used by the Masters . . . . [in order] to prevent gerrymandering."[39]

Accordingly, the California Constitution now boasts the country's most detailed and most highly prioritized requirement of district-community congruence—and, to boot, one that has been employed successfully in two prior decades. Under this provision, only *geographic* communities of interest, i.e.,

34. *Id.* (emphasis added).

35. *See* Votes for and Against November 2, 2010 Statewide Ballot Measures, CALIFORNIA SECRETARY OF STATE, http://www.sos.ca.gov/elections/sov/2010-general/07-for-against.pdf (last visited Feb. 29, 2012).

36. *See* TEXT OF PROPOSED LAWS: PROPOSITION 20, *supra* note 1.

37. *Id.* at 96.

38. *See* Wilson v. Eu, 823 P.2d 545, 573 (Cal. 1992); Legislature v. Reinecke, 10 Cal. 3d 396, 412 (1973).

39. Declaration of Dr. T. Anthony Quinn, Ph.D. in Support of Petitioner for Writ of Mandate or Writ of Prohibition §§ 6, 7, 9, Vandermost v. Bowen, 53 Cal. 4th 421 (2012) (No. S198387); *see also* John Diaz, *The Status Quo Strikes Back*, S.F. CHRON., Sept. 19, 2010, at E2 (observing that Proposition 20's language "was drawn from the guidelines used after the 1990 census," which "contributed to a record number of minorities . . . reaching the Senate and Assembly").

"*contiguous* population[s]," are relevant to the district-drawing process.[40] The provision also defines communities in terms of "common social and economic interests" rather than people's subjective affiliations with particular places.[41] All of the provision's examples of communities ("an urban area, a rural area, an industrial area, or an agricultural area," "areas in which the people share similar living standards, use the same transportation facilities, have similar work opportunities, or have access to the same media of communication") sound in an objective key.[42] Lastly, the provision's conception of communities is resolutely apolitical. Constituents' "relationships with political parties, incumbents, or political candidates," no matter how meaningful, cannot be taken into account by the Commission.[43]

The underlying rationale for California's community-of-interest criterion is that important democratic values such as participation and representation arguably are advanced when districts coincide with geographic communities. With regard to participation, the theory is that voters are more politically informed and engaged when the communities to which they belong are respected by district lines, not broken apart or fused with dissimilar groups.[44] In the words of Proposition 11, "Voters in many communities have no political voice [when they are] split into as many as four different districts."[45] With respect to representation, the claim is that elected officials are better able to identify and serve their constituents' interests when districts correspond to communities.[46] As both Propositions 11 and 20 put it, "We need reform to keep our communities together so everyone has representation."[47]

When it designed California's new districts in 2011, the Commission implemented the community-of-interest criterion by soliciting, and then taking into account, extensive input from concerned individuals and groups. It held dozens of hearings across the state at which thousands of parties submitted oral and

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40. CAL. CONST. art. XXI, § 2(d)(4) (emphasis added).

41. *Id.*; *cf.* Nicholas O. Stephanopoulos, *Redistricting and the Territorial Community*, 160 U. PA. L. REV. 1379, 1430 (2012) (defining communities of interest in both objective and subjective terms).

42. CAL. CONST. art. XXI, § 2(d)(4); *see also* STATE OF CAL. CITIZENS REDISTRICTING COMM'N, FINAL REPORT ON 2011 REDISTRICTING 27 (2011) [hereinafter CRC REPORT] (referring to "industrial/economic interests that define communities").

43. CAL. CONST. art. XXI, § 2(d)(4).

44. *See* Stephanopoulos, *supra* note 12, at 1918-20 (discussing literature on participatory consequences of spatial diversity); *id.* at 1942-45 (finding that voter roll-off rate is higher in districts that are more spatially diverse).

45. TEXT OF PROPOSED LAWS: PROPOSITION 11, *supra* note 1.

46. *See* Stephanopoulos, *supra* note 12, at 1919-20 (discussing literature on representational consequences of spatial diversity); *id.* at 1945-47 (finding that politicians' voting records in spatially diverse districts are less responsive to constituents' needs and interests).

47. TEXT OF PROPOSED LAWS: PROPOSITION 11, *supra* note 1; TEXT OF PROPOSED LAWS: PROPOSITION 20, *supra* note 1.

written comments.[48] It then employed a "district-by-district approach in which [it] deliberated over the best [way] to minimize the splitting of . . . communities of interest."[49] When the goals of subdivision and community preservation conflicted, "the Commission chose the configuration that best reflected the shared interests of the community."[50] However, the Commission apparently did not use demographic or socioeconomic data to identify community boundaries, nor did it attempt to calculate how congruent its districts are with communities.[51]

II. METHODOLOGY

Because of its complexity, very few scholars have attempted to operationalize the concept of a community of interest. In fact, I am not aware of *any* studies that have sought to quantify how closely individual districts correspond to geographic communities.[52] In this Part, I explain how I carried out precisely this sort of quantification for California's old and new assembly, senate, and congressional districts.[53] The key insight is that districts (like all geographic entities) are composed of many smaller spatial subunits. If the subunits within a given district resemble one another, with respect to the factors that shape people's residential patterns, then it is likely that the district coincides with a single geographic community. But if the subunits are highly dissimilar—and especially if they also display a high level of geographic clustering—then it is likely that the district combines two or more distinct communities. In this Article's terminology, the former district is spatially homogeneous while the latter is spatially diverse.

I used two separate sets of data in my analysis, both aimed at capturing Californians' "common social and economic interests."[54] First, I selected approximately one hundred variables from the American Community Survey, an ongoing poll of the American public that is conducted by the Census Bureau.[55]

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48. *See* CRC REPORT, *supra* note 42, at 1, 24.

49. *Id.* at 24.

50. *Id.*

51. The Commission did, however, calculate how many political subdivisions were split by its districts. *See id.* app. at 4.

52. *See supra* notes 10-11. However, scholars frequently have made use of *proxies* for communities of interest such as political subdivisions and media markets. *See* Stephanopoulos, *supra* note 41, at 1451-54.

53. For a more detailed explanation, see Stephanopoulos, *supra* note 12, at 1936-41.

54. CAL. CONST. art. XXI, § 2(d)(4).

55. *See About the American Community Survey*, U.S. CENSUS BUREAU, http://www.census.gov/acs/www/about_the_survey/american_community_survey (last visited Feb. 29, 2012); *see also* Michael P. McDonald, *Redistricting Developments of the Last Decade—and What's on the Table in This One*, 10 ELECTION L.J. 313, 316 (2011) (noting that ACS data "may be useful to establish communities of interest where this is a state requirement").

The variables that I chose cover the five-year period from 2006-2010,[56] have been recognized by other researchers as being relevant to people's residential arrangements,[57] and fit mostly into the following categories: race, ethnicity, age, income, education, profession, marital status, and housing.[58] Second, I obtained the election results for all fifty California popular initiatives held between 2006 and 2010.[59] These initiatives spanned a wide array of important issues: taxes, spending, crime, abortion, energy, the environment, government reform, etc. They constitute the most reliable sources of information about Californians' policy preferences at lower geographic levels.

Fortunately, both the ACS variables and the PI election results were available for census tracts. Tracts have about 4000 people each and are designed to be "as homogeneous as possible with respect to population characteristics, economic status, and living conditions."[60] Because of their small size and internal uniformity, they are the most common units of analysis for social scientists who study the U.S. population.[61] These same characteristics make them ideal for my investigation of district-community congruence. There are about 110 tracts in each assembly district, about 170 in each congressional district, and about 220 in each senate district. These numbers are more than large enough to make it meaningful whether California districts' constituent tracts resemble or differ from one another along key dimensions.

After acquiring the ACS and PI data at the tract level, I carried out a statistical procedure known as factor analysis.[62] Factor analysis is a commonly used tool for simplifying and rendering intelligible large volumes of data.[63] It collapses many raw variables into a handful of composite factors, all of which are linear functions of the raw variables and are calculated so as to capture as much

56. This data was released on December 8, 2011. *See American Community Survey: 2010 Data Release*, U.S. CENSUS BUREAU, http://www.census.gov/acs/www/data_documentation/2010_release (last visited Feb. 29, 2012).

57. *See* Stephanopoulos, *supra* note 12, at 1937 n.173.

58. I used exactly the same ACS variables as in my earlier work, with two minor exceptions: First, the latest ACS data release includes five occupation categories instead of six. Second, I omitted median house value and median rent from my analysis because they were missing for too many California tracts.

59. *See California Election Census Block Data*, STATEWIDE DATABASE, http://swdb.berkeley.edu/ d10/index_election.html (last visited Feb. 29, 2012).

60. U.S. CENSUS BUREAU, CENSUS TRACTS AND BLOCK NUMBERING AREAS 10-1, *available at* http://www.census.gov/geo/www/GARM/Ch10GARM.pdf.

61. *See* Stephanopoulos, *supra* note 12, at 1937 n.171.

62. To be more specific, I employed principal factors analysis with Varimax rotation but without Kaiser normalization, and I retained all factors with an eigenvalue greater than two. I settled on this approach because it yielded the most intelligible composite factors and captured the largest proportion of the data's original variance. While I also carried out a factor analysis for the *combined* ACS and PI data, the composite factors that emerged are somewhat difficult to interpret, and I therefore do not dwell any further on the results of this analysis.

63. *See* Stephanopoulos, *supra* note 12, at 1938 n.177.

as possible of the data's original variance. It is a particularly powerful technique for "disentangl[ing] the sociospatial organization of [residential] space."[64] As Table 1 in the Appendix indicates, the ACS analysis produced six factors that account for sixty-four percent of the data's original variance.[65] As Table 2 shows, the PI analysis gave rise to three factors explaining eighty-seven percent of the variance.[66]

Since these factors are the inputs for all of my spatial diversity calculations, it is worth briefly describing their identities. For the ACS analysis, the factor with the greatest explanatory power is a joint measure of socioeconomic status and Hispanic ethnicity. It distinguishes tracts whose residents are wealthy, well-educated, white professionals from tracts whose residents are poorer, less educated Hispanics working in blue-collar fields.[67] The next most important factor corresponds to marital and residential situation. It differentiates between tracts of married home-owners (mostly suburbs and rural areas) and tracts of unmarried apartment-dwellers (mostly cities). The third and fifth factors both revolve around race; they indicate, respectively, the proportions of tracts' populations that are Asian-American and African-American. The fourth factor is an indicator of sprawl; the tracts that score highest along it are low-density areas with newer housing stock and highly mobile residents. Lastly, the sixth factor is driven primarily by the age of tracts' inhabitants.

For the PI analysis, the factor with the greatest explanatory power is a measure of fiscal policy preferences. It correlates highly with 2008 presidential vote share ($r = 0.84$), and it distinguishes tracts whose voters favor higher tax revenue and government spending (on items such as education, health care, and the environment) from tracts whose voters have the opposite economic views.[68] The next most important factor captures attitudes on social and cultural issues. It correlates less highly with 2008 presidential vote share ($r = -0.44$), and it differentiates between tracts based on whether their voters have conservative or liberal positions on crime, abortion, drug legalization, same-sex marriage, and the like. The third factor, which is far less significant than the first two, distills Californians' opinions on the array of Native American gaming initiatives that appeared on the ballot between 2006 and 2010.

64. Bernadette Hanlon, *A Typology of Inner-Ring Suburbs: Class, Race, and Ethnicity in U.S. Suburbia*, CITY & COMMUNITY, Summer 2009, at 227.

65. *See infra* Appendix, Table 1.

66. *See infra* Appendix, Table 2.

67. That socioeconomic status and Hispanic ethnicity are combined in the same factor shows how closely interrelated they are in California. In my analysis of the country as a whole, they each emerge as separate factors. *See* Stephanopoulos, *supra* note 12, at 1939.

68. This factor also encompasses voters' attitudes on government reform issues such as redistricting. No ACS factor had anywhere near this high a correlation with presidential vote share; the highest such correlation was -0.47 for the urban/suburban factor. As noted later, the significant overlap between the most important PI factor and partisan preference is a good reason for the ACS factors to receive priority in the community-of-interest analysis. *See infra* notes 80-81 and accompanying text.

After I generated these composite factors, I calculated scores along them for all of the census tracts in California. These scores simply show how the tracts perform in terms of the newly created factors. I then computed the standard deviation, with regard to each factor, of the tracts within each old and new assembly, senate, and congressional district.[69] I was able to determine which tracts are located in which districts using Caliper Corporation's Maptitude for Redistricting software.[70] Standard deviation, of course, is the most common statistical measure of heterogeneity. Districts whose tracts are relatively similar, in terms of a particular factor, have a low standard deviation in this respect. Districts whose tracts are relatively dissimilar have a high standard deviation.

Finally, I computed separate weighted averages of each district's standard deviations for the ACS and PI factors. The weights that I used, not surprisingly, were the proportions of the data's original variance that the factors each explained. So, for the ACS analysis, a district's standard deviation for the first factor (socioeconomic status) counted for more than its standard deviation for the second (urban/suburban location), which in turn counted for more than its standard deviation for the third (Asian-American population), and so forth down the list. Similarly, for the PI analysis, heterogeneity of fiscal preferences weighed (a bit) more heavily than heterogeneity of social and cultural attitudes, which in turn weighed (much) more heavily than heterogeneity of gaming views.

These weighted ACS and PI averages are my core metrics of spatial diversity. They reveal, with respect to vast amounts of demographic, socioeconomic, and attitudinal information, the relative heterogeneity of California districts' constituent census tracts. They are also the best available proxies for how closely the districts correspond to geographic communities of interest. Districts with high ACS or PI spatial diversity scores are unlikely to contain "popula-

69. I calculated *weighted* standard deviations in order to take into account tracts' differing populations. In addition, while the vast majority of California's tracts are located entirely within a single district, anywhere from seven to fifteen percent of the state's population (depending on the district plan at issue) lives in tracts that are divided among two or more districts. Since tracts are designed to be internally homogeneous, I simply included split tracts in my calculations for *all* of the districts that contain them. But my results were essentially identical when I excluded split tracts altogether from my analysis. Finally, it arguably would be preferable to calculate the spatial diversity of the new districts using the 2006-2010 data, and the spatial diversity of the old districts using analogous data from ten years earlier. Unfortunately, ACS data is not available at the census tract level for periods before 2005-2009, and the popular initiatives of the 1990s were obviously different from those of the 2000s. I therefore had no option but to calculate spatial diversity scores for both sets of districts with respect to the same ACS and PI data.

70. This is the same software that I used to generate the district maps that are displayed later in the Article. *See infra* Part III.B. I obtained the new district plans from the Commission's website. *See Current Status of Commission's Final Certified District Maps*, CALIFORNIA CITIZENS REDISTRICTING COMMISSION, http://wedrawthelines.ca.gov/maps-final-drafts.html (last visited Feb. 29, 2012).

tion[s] which share[] common social and economic interests."[71] By definition, the tracts in these districts differ markedly from one another in terms of the most significant ACS or PI factors. Conversely, districts with low spatial diversity scores tend to coincide with "urban area[s]," "rural area[s]," "industrial area[s]," or "agricultural area[s]," to name a few of the community types listed by the California Constitution.[72] These districts' tracts necessarily are similar to one another along the most important axes identified by the factor analysis.

One last methodological point is worth noting. Because it is arithmetically possible for a district's high spatial diversity to be the result of a checkerboard tract pattern—rather than the fusion of distinct tract groups—I investigated to what degree the tracts clustered geographically in terms of the various composite factors. Fortunately, the degree of clustering was extremely high, allowing me to reject the null hypothesis of no spatial autocorrelation for almost every district and factor that I examined.[73] This means that a district's high spatial diversity indeed indicates that it combines different spatial clusters of tracts (i.e., geographic communities), not that its tracts merely happen to be arranged in the form of a checkerboard.

III. RESULTS

This Article's principal goal is to evaluate how well the Citizens Redistricting Commission complied with its mandate to respect the integrity of California's geographic communities of interest. In this Part, I assess the Commission's performance in two different ways. First, I compare its new district plans to both their predecessors and district plans in other states. I find, for the most part, that the new plans have lower spatial diversity averages and fewer extremely spatially diverse districts than their antecedents, in terms of both the ACS and PI factors. I also find that the new congressional plan's ACS spatial diversity average, adjusted for California's intrinsic heterogeneity and large number of districts, ranks nineteenth in the country instead of fifth. This is evidence that the Commission did comply with its community preservation mandate, but that it could have done an even better job.

Second, I present a series of vignettes that portray the Commission's performance cartographically, using maps of districts and the factor scores of their constituent tracts. I include examples of areas where the Commission was able to raise dramatically the level of district-community congruence, areas where it was unable to do so but through no fault of its own, and areas where more spatially homogeneous districts indeed could have been drawn. The upshot of the-

71. CAL. CONST. art. XXI, § 2(d)(4).

72. *Id.*

73. I measured spatial autocorrelation by calculating the Global Moran's I for a wide range of districts and with respect to all of the composite factors. The Global Moran's I scores that I obtained were almost always positive (indicating spatial autocorrelation) and highly statistically significant.

se vignettes is the same as that of the overall analysis: The Commission-crafted districts clearly correspond to geographic communities more closely than the districts they replaced, but they could have been made more congruent still.

A. *Overall Findings*

As described above,[74] I calculated spatial diversity scores for California's old and new assembly, senate, and congressional districts with respect to both the ACS and PI factors. These scores, along with additional information about the spatial diversity distributions of the district plans, are provided in Tables 3-8 in the Appendix.[75] In this Part, I use the scores to compare the old and new plans along several dimensions: their spatial diversity averages, their numbers of outlier districts, the shapes of their distributions, and their regression residuals compared to those of other states.

1. *District plan averages*

To begin with, the most straightforward way to assess the plans is simply to compute their spatial diversity averages. Averages are preferable here to medians because they take into account the edges of distributions rather than just their centers. That is, averages respond to changes in the characteristics of extreme districts—which, especially at the high spatial diversity end, are precisely the sorts of districts on which we might expect the Commission to have focused.[76] For the same reason, another recent study also provided only compactness averages for the old and new California districts.[77]

As Figure 1 illustrates, the new assembly, senate, and congressional districts, on average, are all more spatially homogeneous than their predecessors with respect to the ACS factors. The improvement is quite small for the assembly districts (0.73 to 0.72), but somewhat more substantial for the senate and congressional districts (0.79 to 0.76 and 0.77 to 0.74, respectively). As Figure 2 shows, the story is more equivocal for the PI factors. The old and new congressional districts have the same average (0.64), the assembly districts improved marginally (0.60 to 0.59), and only the senate districts experienced a noticeable

74. *See supra* Part II.

75. *See infra* Appendix, Tables 3, 4, 5, 6, 7 & 8. Districts' ACS and PI scores are fairly closely related, with their correlations ranging from 0.59 (for the new senate plan) to 0.74 (for the old senate plan).

76. Nevertheless, median spatial diversity scores are provided in the Appendix for each district plan. *See supra* note 75. Like their spatial diversity averages, the new district plans' medians also declined, though not quite to the same extent.

77. *See* Kogan & McGhee, *supra* note 9, at 18-19; *see also* Hofeller & Grofman, *supra* note 18, at 284-86 (same for 1970s and 1980s California districts).

downtick in spatial diversity (0.67 to 0.65). Statistical mean-comparison tests paint essentially the same picture.[78]

Several points follow from these results. First, to the extent that spatial homogeneity is a valid proxy for district-community congruence, the new districts do correspond more closely to geographic communities than the districts they replaced. However, their increase in congruence is relatively modest, at least by this measure: only 0 to 0.03 (or zero to four percent), depending on the relevant district plan and factor set. Second, there does not appear to be any significant conflict between respect for communities of interest and other common redistricting criteria. The new California districts perform better in terms of *both* spatial homogeneity and dimensions such as compactness, competitiveness, partisan fairness, and minority representation.[79]

Third, the Commission seems to have paid more attention to demographic and socioeconomic information (i.e., the ACS variables) than to voters' policy preferences (i.e., the PI results). None of the district plans improved as much with respect to the PI factors as the senate and congressional plans improved along the ACS factors. Since the PI factors overlap substantially with voters' partisan views,[80] which the Commission is forbidden from considering,[81] its apparent prioritization of objective census data is both unsurprising and legally appropriate. Fourth, the rise in spatial homogeneity was greater for the senate districts than for the assembly or congressional districts. The senate districts underwent the largest increase in terms of both the ACS and PI factors, while the assembly districts barely budged in either dimension, and the congressional districts' PI average (unlike their ACS average) remained completely flat.

Lastly, for both sets of factors, and under both the old and new plans, the larger an electoral district is, the more spatially diverse it tends to be. In other words, senate districts are more spatially diverse (on average) than congressional districts, which in turn are more spatially diverse (on average) than assembly districts.[82] This is the same relationship that social scientists have found

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78. Two-sample mean-comparison t-tests result in the following p-values: ACS Assembly (0.30), ACS Senate (0.18), ACS Congress (0.15), PI Assembly (0.31), PI Senate (0.21), PI Congress (0.50). These figures are consistent with the conclusion of small to modest spatial diversity improvement that is implied by the raw averages.

79. *See* Kogan & McGhee, *supra* note 9, at 21 (also observing that "the apparent conflicts between the redistricting criteria were less pronounced than many redistricting scholars may have expected").

80. *See supra* note 68 and accompanying text.

81. *See* CAL. CONST. art. XXI, § 2(d)(4) ("Communities of interest shall not include relationships with political parties, incumbents, or political candidates.").

82. *Cf.* CRC REPORT, *supra* note 42, at 42 (noting that "size of the [s]enate districts [only] allowed the Commission to recognize broadly shared interests" and that "[t]here are a number of cases where there were a variety of different interests in the [s]enate districts"); *id.* at 28 ("With [assembly] districts, the Commission was able to respect many local communities of interest and group similar communities . . . .").

for other measures of geographic variation.[83] The explanation is simply that, holding subunit size constant, larger entities contain more subunits and thus capture more of the heterogeneity of any given variable.

Figure 1: District Plans' Average ACS Spatial Diversity Scores

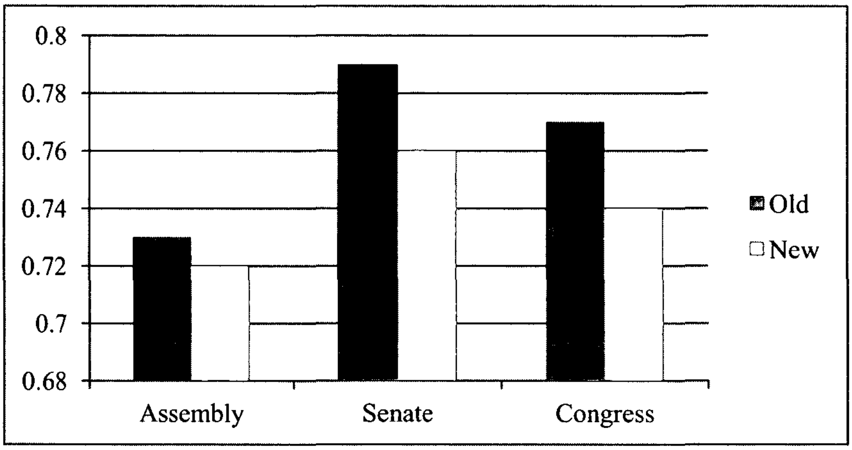
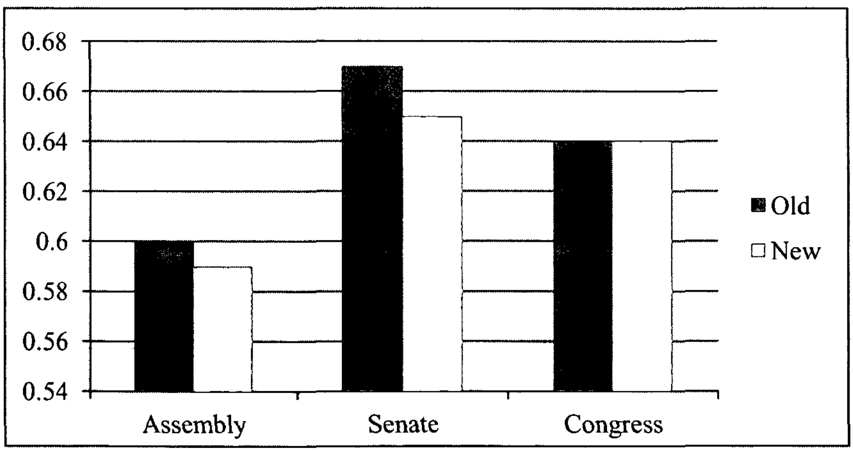


Figure 2: District Plans' Average PI Spatial Diversity Scores



83. *See, e.g.*, J.A. Wiens, *Spatial Scaling in Ecology*, 3 FUNCTIONAL ECOLOGY 385, 388 (1989).

2. *Outlier districts*

Of course, spatial diversity averages are not the only way to assess the Commission's performance with respect to district-community congruence. Another reasonable approach is to count the number of outlier districts in the various plans—i.e., districts that exceed a certain (high) spatial diversity threshold.[84] These are the districts that are most likely to combine different geographic communities, thanks to the highly dissimilar clusters of tracts that they contain. These are the districts, that is, that are least apt to encompass "contiguous population[s] which share[] common social and economic interests."[85]

After examining the plans' spatial diversity distributions, I set thresholds of 0.90 for the ACS factors and 0.80 for the PI factors. While somewhat arbitrary, these thresholds do clearly distinguish the most spatially diverse districts from the remaining portions of the distributions.[86] For the ACS factors, as Figure 3 illustrates, the number of districts above the threshold fell from six to five for the Assembly, from nine to four for the Senate, and from eight to five for Congress. For the PI factors, as Figure 4 shows, the number of districts above the threshold stayed constant at five for the Assembly, decreased from seven to four for the Senate, and increased from six to seven for Congress.

These results have implications that are mostly similar to those of the spatial diversity averages.[87] Again, the overall story is one of improvement, with the total number of outlier districts declining with respect to both the ACS and PI factors. Again, no conflict is evident between respect for communities of interest and other redistricting criteria. Again, the differences between the old and new district plans are noticeably greater in terms of the ACS factors. And again, the rise in district-community congruence is clearest for the Senate, which experienced a sharp drop in outlier districts according to both sets of factors.

Unlike the spatial diversity averages, however, these results suggest that the Commission-crafted districts may be significantly (not just modestly) better than their predecessors, at least with respect to the ACS factors. While the various district plans' ACS averages decreased only moderately, their numbers of ACS outlier districts dropped fairly dramatically: by seventeen percent for the Assembly, thirty-eight percent for Congress, and fifty-six percent for the Senate. If these extreme districts are the real problem—the districts that are most

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84. One could also examine the numbers of districts with unusually *low* spatial diversity scores. With anti-gerrymandering provisions like California's community preservation requirement, however, it seems more appropriate to focus on districts that might *violate* the requirement than districts that might comply with it particularly well.

85. CAL. CONST. art. XXI, § 2(d)(4).

86. The results remain almost identical if other similar thresholds are used.

87. *See supra* Part III.A.1.

likely to merge different geographic communities and hence to violate the California Constitution—then the new plans seem substantially less worrisome than their antecedents. Their spatial diversity averages may be only somewhat lower, but they contain many fewer of the community-disruptive districts that helped cause the adoption of Propositions 11 and 20.[88]

Figure 3: ACS Outlier Districts (Spatial Diversity > 0.90)

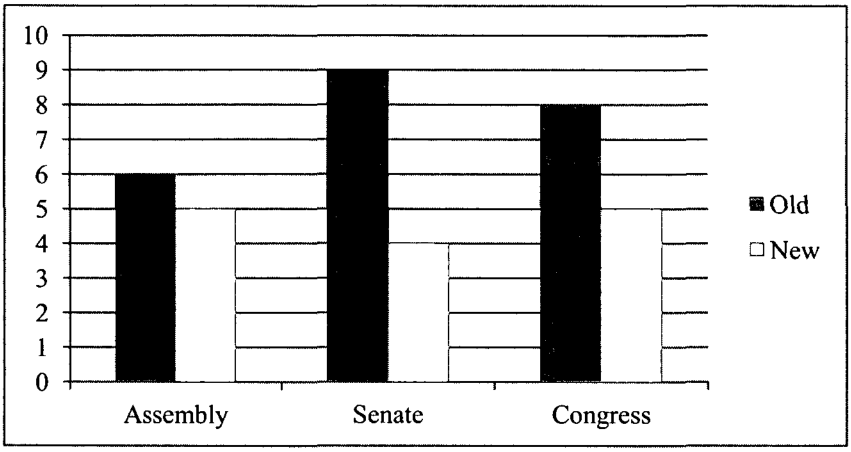
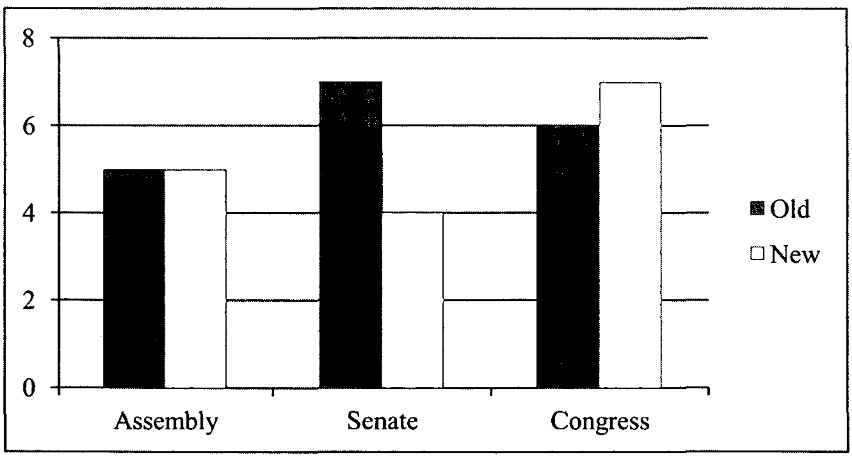


Figure 4: PI Outlier Districts (Spatial Diversity > 0.80)



88. *See* Kogan & McGhee, *supra* note 9, at 6 (noting that new "criteria represented a backlash against perceived abuses of the 2001 process, including districts that split cities"); *see also* TEXT OF PROPOSED LAWS: PROPOSITION 11, *supra* note 1 ("Voters in many communities have no political voice because they have been split into as many as four different districts . . . ."); TEXT OF PROPOSED LAWS: PROPOSITION 20, *supra* note 1 ("Cities, counties, and communities are currently split between bizarrely jagged congressional districts . . . .").

3. *District plan distributions*

Still another way to compare the old and new district plans is to examine not just their averages and outliers, but rather their entire spatial diversity distributions. To do so, I created kernel density estimations—which are essentially smoother versions of histograms—for all six plans at issue.[89] These estimations, which are displayed in Figures 5-7, show the proportions of districts in the plans that possess each particular level of spatial diversity. They reveal, in other words, the distributions' averages, outliers, *and* specific shapes.

For the most part, the kernel density estimations provide further confirmation of this Part's earlier findings. The new district plan curves tend to be positioned slightly to the left of the old curves, indicating their lower spatial diversity averages. The right-hand ends of the new curves also typically fall below the right-hand ends of the old curves, denoting the smaller numbers of outlier districts in the new plans. Furthermore, the gaps between the old and new curves are most pronounced for the senate districts and least pronounced for the assembly districts, with respect to both the ACS and PI factors. And the congressional districts improved noticeably according to the ACS curves, but either stayed the same or deteriorated according to the PI curves.

The kernel density estimations also add to the above results in several ways. First, they show that the spatial diversity distributions for the Assembly and Congress are approximately normal, while the senate distributions are skewed to the right. The senate curves have right tails that are clearly more conspicuous than those of the assembly and congressional curves. Second, the estimations demonstrate that the Commission not only decreased the proportion of highly spatially diverse districts, but also increased the proportion of highly spatially homogeneous districts. The left-hand ends of the new curves are generally located above the left-hand ends of the old curves. Lastly, it is interesting that the old and new curves for each plan, despite the differences I have identified, do not typically look *that* dissimilar. It seems that the Commission did not bring about the wholesale transformation of California's districts—indeed, it may be, given the state's underlying political geography, that no plausible maps can result in such sweeping upheaval.[90]

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89. For another example of kernel density estimations being used to analyze California's districts, see Kogan & McGhee, *supra* note 9, at 12-14, 18.

90. *See infra* Part III.B.2 (noting that it seems to be impossible to draw spatially homogeneous districts in the East Bay). The old and new PI curves for the congressional plans, whose shapes are quite dissimilar, are the one notable exception. Interestingly, the PI curves suggest that the new congressional plans differ dramatically from their predecessors, while the ACS curves imply a much greater degree of continuity.

Figure 5: Assembly Spatial Diversity Kernel Density Estimations

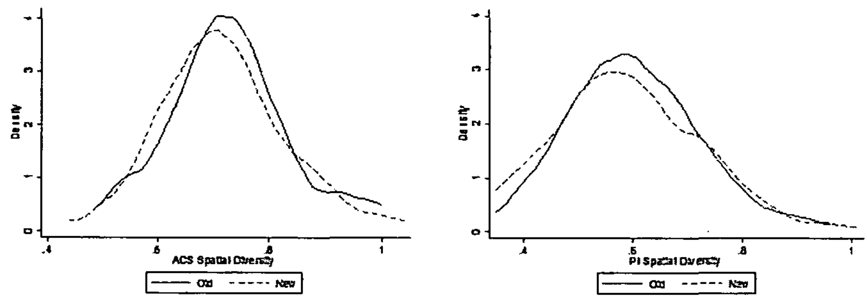


Figure 6: Senate Spatial Diversity Kernel Density Estimations

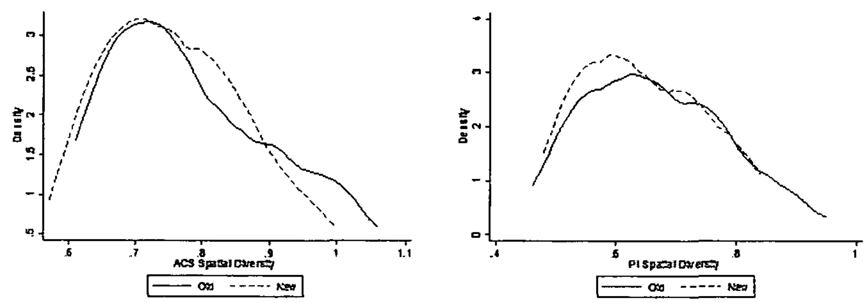
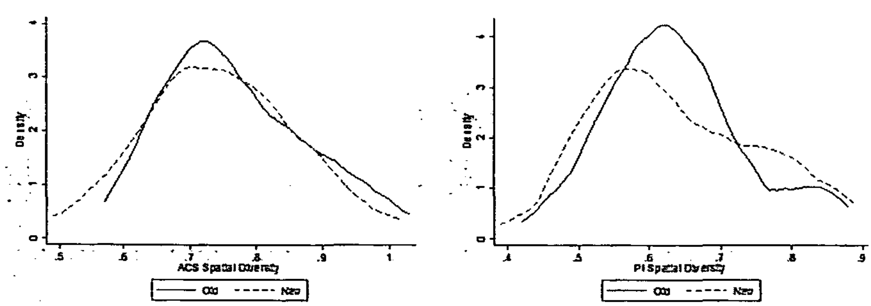


Figure 7: Congress Spatial Diversity Kernel Density Estimations



4. *Inter-state comparisons*

The analysis to this point establishes that the new California districts tend to be more congruent with geographic communities than their predecessors, but it gives no sense of how either the old or new districts fare relative to their peers around the country. This issue can be tackled only with respect to congressional districts and the ACS factors. State legislative districts vary too much in their population and number of representatives to be compared effectively, and it is only California's voters, of course, who get to express their views on the state's many popular initiatives. My source for other states' congressional spatial diversity averages is a recent article of mine that relied on 2005-2009 (rather than 2006-2010) ACS data.[91]

As noted above, California's ACS average was 0.77 for the old congressional plan and 0.74 for the new plan.[92] The analogous figure that I calculated for the old plan in my previous paper, using data for the entire country rather than just California, was 0.81—the second-highest score in America.[93] If we assume (quite reasonably[94]) that the new plan improved to the same degree according to the nationwide data, then its average would be 0.79. This would still be the second-highest score in America, which suggests, at first glance, that the Commission did not improve matters much at all.

Spatial diversity averages, however, are relatively poor metrics for interstate comparisons. This is because the averages are driven not only by states' district-drawing choices, but also by their intrinsic levels of geographic heterogeneity and the numbers of districts that they possess. The more heterogeneous a state's census tracts are, the more heterogeneous its districts tend to be. And the more districts a state has, keeping its intrinsic heterogeneity constant, the less heterogeneous its districts tend to be. These considerations are irrelevant for assessments of district plans for the *same* state, but they are highly problematic for *inter*-state comparisons.

To circumvent these difficulties, I regressed the raw spatial diversity averages against states' intrinsic levels of geographic heterogeneity as well as their numbers of districts.[95] I then calculated the *residual* for each state, that is, the difference between the state's actual spatial diversity average and the average predicted by the regression. A positive residual indicates that a state's districts

91. *See* Stephanopoulos, *supra* note 12, at 1993 tbl. 5.

92. *See supra* Part III.A.1.

93. *See* Stephanopoulos, *supra* note 12, at 1993 tbl. 5.

94. The spatial diversity scores that I calculated in this Article for California's old congressional districts, using 2006-2010 ACS data for California alone, have a correlation of 0.96 with the analogous scores that I calculated in my previous paper, using 2005-2009 ACS data for the country as a whole.

95. *See infra* Appendix, Table 9. All of the regressions that I ran for this Article used ordinary least squares.

are more spatially diverse than one would expect given the state's intrinsic heterogeneity and number of districts, presumably because of community-disrupting district-drawing choices. Conversely, a negative residual means that a state's districts are less spatially diverse than one would expect, presumably because of community-preserving district-drawing choices.[96]

As Figure 8 illustrates, California's old congressional plan had a positive residual of 0.033—the fifth-highest in the country. California falls well above the best fit line in the chart, revealing that its old districts were very spatially diverse even after accounting for the state's intrinsic heterogeneity and large number of districts. But, as Figure 9 shows, California's new congressional plan has a positive residual of only 0.012—the nineteenth-highest in the country. California now falls much closer to (though still above) the best fit line, consistent with a position in the middle of the spatial diversity pack.[97]

These results demonstrate that the Commission succeeded in making California's congressional districts significantly more congruent with geographic communities, relative to their peers around the country. A drop from fifth place nationwide to nineteenth, from well above the best fit line to right on top of it, is a genuine accomplishment. At the same time, the results highlight the need for further improvement. The middle of the pack is preferable to the rear, but California probably should be able to do better still since it now has the country's most detailed and most highly prioritized community preservation requirement. In particular, there is no obvious reason why California should lag so far behind other large and diverse states such as Illinois, New York, and Virginia, all of which boast impressive negative residuals. Much progress has thus been made, but California cannot yet rest on its redistricting laurels.

96. *See* JIA WANG, MEASURING COUNTRY PERFORMANCE ON HEALTH: SELECTED INDICATORS FOR 115 COUNTRIES 6 (1999) (discussing use of regression residuals as performance measures).

97. The results are similar if states with only one congressional district (whose raw spatial diversity averages and levels of intrinsic heterogeneity are necessarily identical) are omitted from the analysis. In that case, California's residual goes from third in the country to tenth.

Figure 8: Actual Versus Predicted Spatial Diversity Averages (Old California Plan)

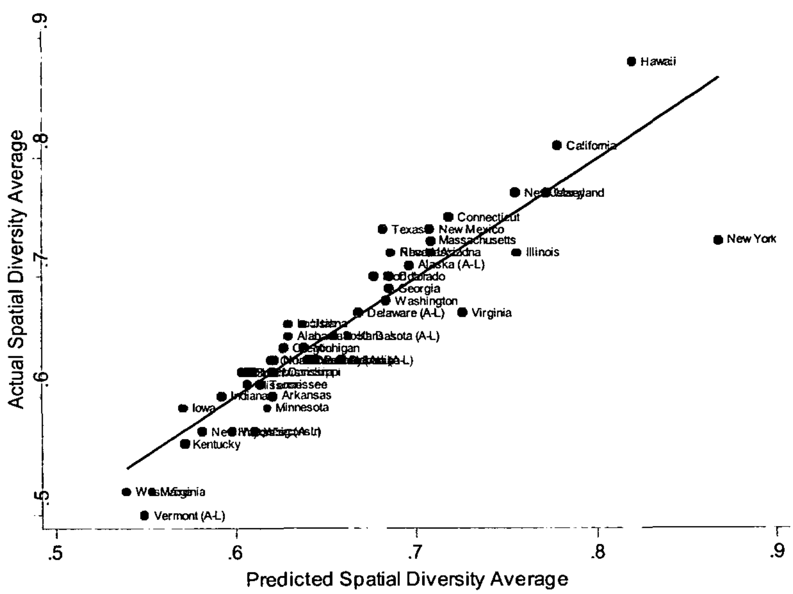
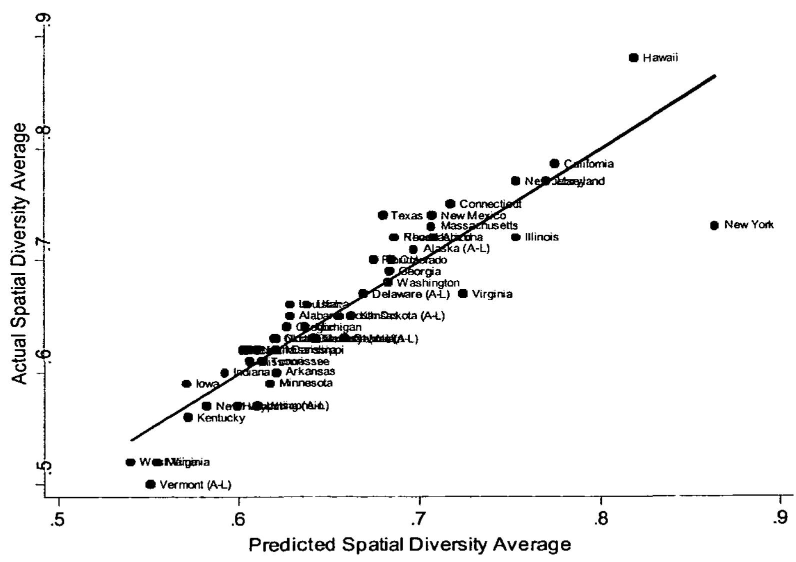


Figure 9: Actual Versus Predicted Spatial Diversity Averages (New California Plan)



B. *Selected Vignettes*

If the Commission's community preservation record is good but not excellent, what is the explanation for its performance? How did it manage to raise the level of district-community congruence in some areas, and why was it unable to do so in others? A full answer to these questions would require a detailed district-by-district examination of both the old and new plans, and is thus beyond the scope of this Article. In this Part, however, I present a series of vignettes that illuminate some of the district-drawing choices that the Commission made. I include both success stories, i.e., areas where the Commission-crafted districts are more spatially homogeneous than their predecessors, and potential shortfalls, i.e., areas where the new districts are still as spatially diverse as the old ones. These vignettes, of course, capture only a small subset of the issues with which the Commission grappled. But they should still give a sense of how a conscientious line-drawer might attempt (and sometimes fail) to respect geographic communities.

I display only ACS factors in this Part's maps—socioeconomic status, urban versus suburban location, Asian-American population, etc. Since the plans evinced much less improvement with respect to the PI factors, and since the Commission arguably is barred from considering them, it seemed sensible to focus on the results of the ACS analysis. The shades of the census tracts in the maps reflect their scores along the various factors. For example, in a map showing socioeconomic status, the populations of the darkest tracts are very affluent while the residents of the lightest tracts are highly disadvantaged.[98]

1. *Success stories*

In order to reduce the plans' spatial diversity averages and numbers of outlier districts, the Commission necessarily had to raise the level of district-community congruence in many areas across California. Here I discuss three of the Commission's successes, one for each plan and for each of the three most important ACS factors. Again, these examples are suggestive but too few to be definitive.

First, in the old congressional plan, District 28 was the fourth-worst in the state in terms of overall spatial diversity (0.94), and the very worst in terms of socioeconomic heterogeneity (1.28).[99] As Figure 10 illustrates, it combined a

98. For information on which raw variables are included in each composite factor, see Appendix, Table 1.

99. *See infra* Appendix, Table 4. Each factor has an overall standard deviation, taking into account all of the tracts in California, of 1.0. So if an individual district has a standard deviation of 1.0 for a given factor, this means that its tracts are as heterogeneous along this dimension as the state as a whole. This is a very high level of heterogeneity.

poor and heavily Hispanic portion of the San Fernando Valley with very wealthy and white locales such as Beverly Park, Sherman Oaks, and Studio City. In the new congressional plan, in contrast, District 28's successor, District 29, no longer includes these affluent precincts. Instead, it swells to the north, east, and west, subsuming additional underprivileged areas in North Hollywood, Sun Valley, and Van Nuys. As a result, District 29 ranks thirty-first in the state in overall spatial diversity (0.72), and thirteenth in socioeconomic heterogeneity (0.81).[100] It plainly corresponds more closely than its predecessor to an "area[] in which people share similar living standards . . . [and] have similar work opportunities."[101]

Nor did the Commission have to make significant sacrifices in adjacent districts in order to realize this gain. Old District 27, the main constituency into which new District 29 expanded, ranked thirtieth in California in overall spatial diversity (0.73).[102] Its successor, new District 30, ranks twenty-second, with an overall score that is only slightly higher (0.76).[103] Similarly, the successors to the other two districts that bordered old District 28 have close to the same overall spatial diversity as the districts they replaced. New District 28 is slightly less spatially diverse than old District 29 (0.84 versus 0.85), while new District 33 is slightly more spatially diverse than old District 30 (0.77 versus 0.73).[104] Compared to the dramatic improvement from old District 28 to new District 29, these differences in the adjacent districts are trivial. The Commission barely had to reduce the level of district-community congruence anywhere else in order to raise it impressively in the heart of the San Fernando Valley.

100. *See infra* Appendix, Table 3.

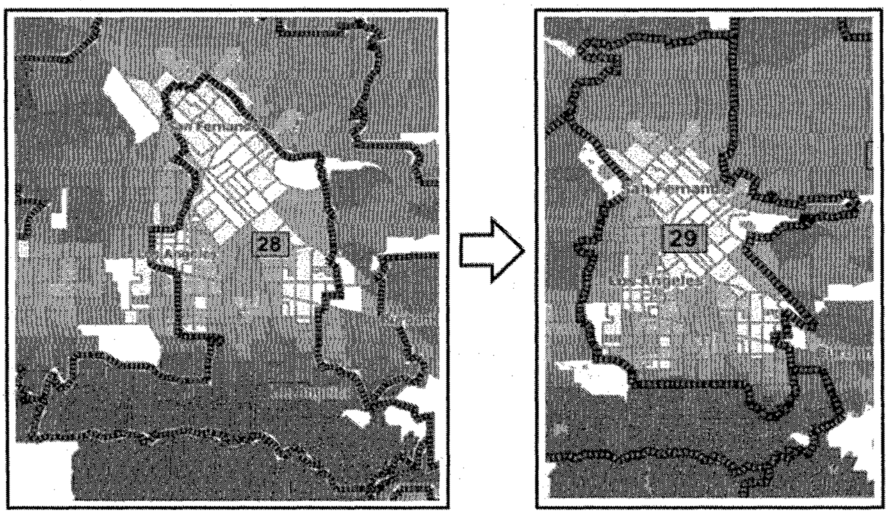
101. CAL. CONST. art. XXI, § 2(d)(4). New District 29 is also more geographically compact than old District 28 and more conducive to minority representation, thanks to its Hispanic citizen voting-age population (CVAP) majority.

102. *See infra* Appendix, Table 4.

103. *See infra* Appendix, Table 3.

104. *See infra* Appendix, Tables 3 & 4.

Figure 10: Socioeconomic Status Maps (Old and New Congressional Plans)



Second, in the old senate plan, District 23 was the second-worst in the state in terms of overall spatial diversity (1.01), and the very worst in terms of urban/suburban heterogeneity (1.25).[105] As Figure 11 illustrates, it joined the Westside of Los Angeles, including urban neighborhoods such as Santa Monica and West Hollywood, with a string of suburbs to the city's northwest: Agoura Hills, Calabasas, Malibu, Topanga, etc. Its western end (not shown on the map) encompassed most of the city of Oxnard. In the new senate plan, in contrast, District 23's principal successor, District 27, is confined to suburbs in the San Fernando Valley and the Santa Monica Mountains. It no longer ventures into the urban cores of Los Angeles and Oxnard, and, as the Commission noted in its final report, "[it] maintains the coastal mountain range and watershed" and "reunites the [towns] . . . along the Highway 101 and 118 corridors."[106] As a result, District 27 ranks twenty-fourth in the state in overall spatial diversity (0.72), and fourteenth in urban/suburban heterogeneity (0.89).[107]

Again, the Commission did not have to skimp much elsewhere in order to make this improvement. New District 26, which now incorporates Santa Monica, West Hollywood, and other Los Angeles neighborhoods, is much more spatially homogeneous than both old District 23 (0.80 versus 1.01) and the oth-

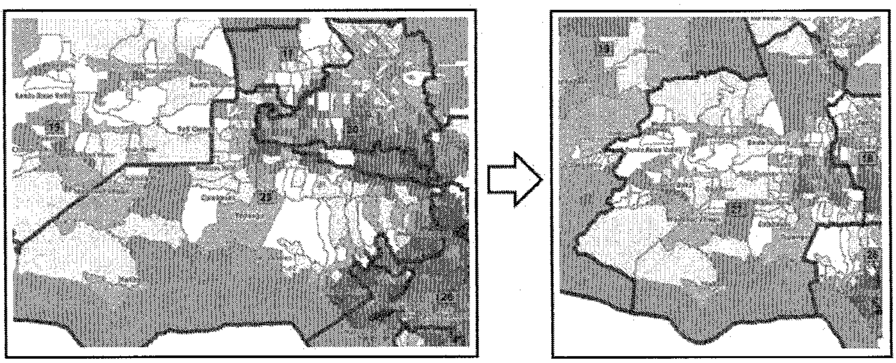
105. *See infra* Appendix, Table 6.

106. CRC REPORT, *supra* note 42, at 48.

107. *See infra* Appendix, Table 5. New District 28 is also more geographically compact and more electorally competitive than old District 23.

er urban district that it replaced, old District 28 (0.80 versus 1.00).[108] Similarly, new District 19, which picked up Oxnard after it was dropped from new District 27, is much more spatially homogeneous than old District 23 (0.84 versus 1.01), though it is more spatially diverse than its other predecessor district, old District 19 (0.84 versus 0.73).[109] The spatial diversity tradeoffs that the Commission had to make in this region were thus relatively minor, with the gains in district-community congruence easily exceeding the losses.

Figure 11: Urban/Suburban Maps (Old and New Senate Plans)



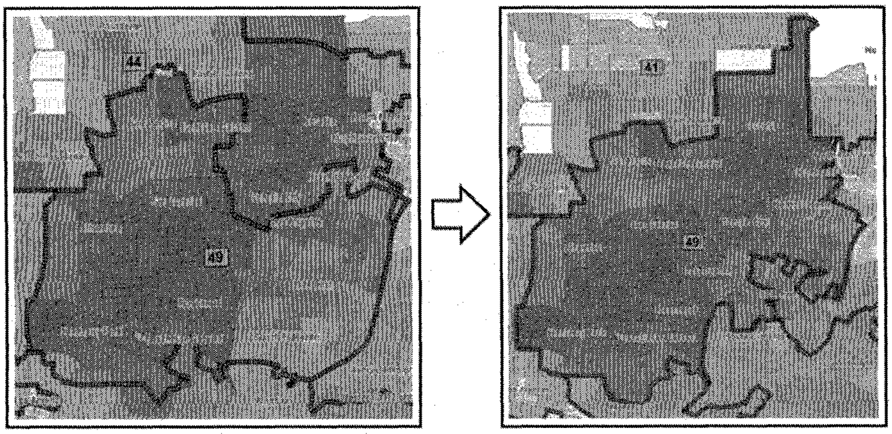
Lastly, in the old assembly plan, the compact Asian-American community in the San Gabriel Valley was divided between two districts. As Figure 12 illustrates, District 44 included the northeastern half of the community (e.g., Arcadia, Mayflower Village, Temple City), while District 49 contained the southwestern half (e.g., Alhambra, Monterey Park, Rosemead, San Marino). Both of these districts were fairly spatially diverse overall (0.83 and 0.82, respectively), and highly spatially diverse with respect to Asian-American population (1.09 and 1.13).[110]

In the new assembly plan, in contrast, almost the entire Asian-American community is located in District 49, which is now a majority-minority district. As the Commission stated, District 49 "shares commercial, cultural, [and] educational connections among the Asian-American residents of these cities, as well as common concerns of recent immigrant populations, including language

108. *See infra* Appendix, Tables 5 & 6.
109. *See infra* Appendix, Tables 5 & 6.
110. *See infra* Appendix, Table 8.

access [and] social services."[111] Conversely, new District 41 is positioned further to the north and east than its predecessor, old District 44, and it no longer has a sizeable Asian-American presence. As a result, new Districts 41 and 49 are both more spatially homogeneous overall (0.73 and 0.77, respectively), and more spatially homogeneous in terms of Asian-American population (0.51 and 0.98), than the districts they replaced.[112] By creating a majority-minority district in the San Gabriel Valley, the Commission was able to make both this district and its northern neighbor more congruent with geographic communities.

Figure 12: Asian-American Maps (Old and New Assembly Plans)



2. *Potential shortfalls*

However, not all of the Commission's district-drawing choices were as successful as the above three examples. In several areas across the state, the new districts remain at least as spatially diverse as their antecedents. This is why the new plans' spatial diversity averages are only somewhat lower, and why a substantial number of outlier districts still exist. As I discuss below, California's underlying political geography sometimes made it almost impossible for the Commission to craft districts that correspond closely to communities. But sometimes the shortfalls seem to have been squarely its own responsibility.

111. CRC REPORT, *supra* note 42, at 36; *see also id.* at 20-21.

112. *See infra* Appendix, Table 7.

San Francisco's East Bay nicely demonstrates why spatially homogeneous districts cannot always be drawn.[113] As Figure 13 illustrates, the region features an unusual alternating pattern of very affluent and very disadvantaged areas. To the north of struggling Oakland lie the wealthy towns of Berkeley, Kensington, and Piedmont, and to the north of them are the poor cities of Richmond and San Pablo. Further north and further south are largely middle-class locales, while the interior is again highly prosperous.

The consequence of this pattern is that any district that includes most of the East Bay likely will be very spatially diverse, at least in terms of socioeconomic status. Any East Bay district likely will need to combine Oakland with Berkeley, Richmond with Kensington, San Pablo with Piedmont. That old Senate District 9 had the third-highest spatial diversity in the state (1.00) therefore should not be construed as a significant strike against it.[114] Similarly, the Commission bears little blame for the very high spatial diversity of new Senate District 9 (0.99).[115] There simply was no reasonable way for the Commission to draw much more spatially homogeneous senate districts in this region.[116] Even if the Commission had split the East Bay in two, as it did for its assembly plan (for districts half as large), the results would not have been any better. New Assembly District 18, which stretches south from Oakland, still ranks fifth in the state in spatial diversity (0.90), while new Assembly District 15, which joins Berkeley and Richmond, still ranks second (1.00).[117]

113. San Francisco itself provides another good example. Because the city is highly heterogeneous along multiple dimensions, districts that largely correspond to it, such as old Congressional District 8 and new Congressional District 12, are also very spatially diverse. *See infra* Appendix, Tables 3 & 4.

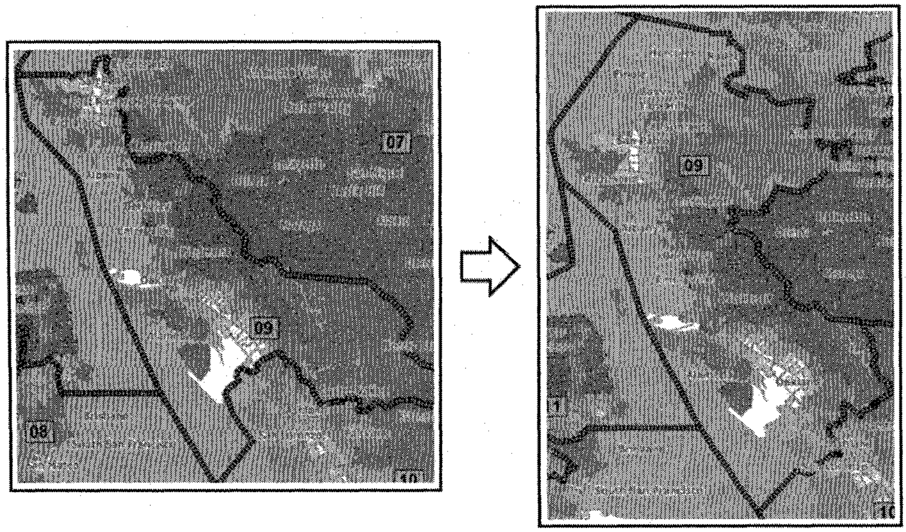
114. *See infra* Appendix, Table 6. The portion of the district that is not shown on the map extended southeast into the interior of the East Bay.

115. *See infra* Appendix, Table 5. New District 9 at least is more geographically compact than old District 9.

116. The Commission presumably could have drawn highly contorted East Bay districts with lower spatial diversity scores, but such districts may well have violated California's geographic compactness requirement. *See* CAL. CONST. art. XXI, § 2(d)(5).

117. *See infra* Appendix, Table 7. Similarly, old Congressional District 9 was the most spatially diverse in California (1.03), as is new Congressional District 13 (1.02). *See infra* Appendix, Tables 3 & 4. Both of these districts occupied the bulk of the East Bay.

Figure 13: Socioeconomic Status Maps (Old and New Senate Maps)



On the other hand, the Commission clearly could have drawn districts that are more congruent with geographic communities in other parts of California. For example, as Figure 14 illustrates, the concentrated African-American community in South Los Angeles was divided between three districts in the old congressional plan. Old Districts 33, 35, and 37 were each between 24 percent and 31 percent black, and ranked first, second, and fifth in the state in spatial diversity with respect to African-American population (1.65, 1.54, and 1.17, respectively).[118] In the new plan, the situation remains exactly the same. The South L.A. African-American community again is split between three districts (none more than 25 percent black), and new Districts 37, 43, and 44 now rank first, second, and third in African-American spatial diversity (1.73, 1.59, and 1.27, respectively).[119]

But the Commission easily could have avoided this outcome. Instead of fragmenting the African-American community, it could have united it in a single district extending from View Park-Windsor Hills in the northwest, through Inglewood and Compton, to Carson in the southeast.[120] Unlike the East Bay,

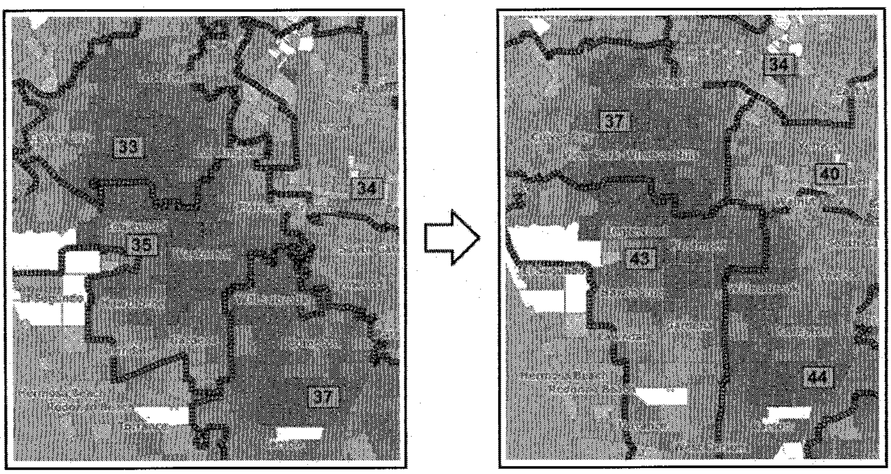
118. *See infra* Appendix, Table 4.

119. *See infra* Appendix, Table 3.

120. *See* CRC REPORT, *supra* note 42, at 19 (noting that South L.A. "African Americans could form a majority CVAP in a reasonably compact geographic area in at least . . . one congressional district").

South L.A. presents no geographic complexities that prevent spatially homogeneous districts from being drawn. If anything, it is unusually *easy* to craft such districts thanks to the pronounced clustering of the area's African-American population. To be sure, the Commission had reasons for its choices: Consistent with the views of African-American interest groups, it wished to preserve all three congressional districts that are currently represented by African-American politicians.[121] But the California Constitution does not permit geographic communities to be divided simply because some of their members consider division to be politically beneficial. And the Commission is explicitly barred from taking into account "relationships with . . . incumbents" in its community-of-interest analysis.[122] Accordingly, the Commission probably ought to have replaced old Districts 33, 35, and 37 with a single, much more spatially homogeneous district encompassing most of the South L.A. African-American population.[123]

Figure 14: African-American Maps (Old and New Congressional Plans)



121. *See id.* at 19-20.

122. CAL. CONST. art. XXI, § 2(d)(4).

123. The Commission further justified its district-drawing choices by noting that "[s]ome members of the public suggested that the intentional creation of such a majority-Black district could give rise to a violation of Section 2 of the Voting Rights Act based on . . . a 'packing' claim." CRC REPORT, *supra* note 42, at 20. Since the African-American population in South L.A. is only numerous enough to constitute a bare majority of a single congressional district, however, there was no reasonable basis for the Commission to fear a Section 2 packing challenge. This may be why the Commission did not make the Section 2 argument itself, but rather attributed it to "[s]ome members of the public." *Id.*

A final example of the Commission's suboptimal district-drawing comes from Central Los Angeles. As Figure 15 illustrates, old Assembly District 48 was quite spatially diverse both overall (0.88) and in terms of urban/suburban location (0.88).[124] It combined densely populated areas such as East Hollywood and Koreatown with neighborhoods such as Athens, Vermont Square, and Westmont that contain mostly single-unit residences. New Assembly District 53 is just as geographically heterogeneous. It joins East Hollywood and Koreatown with heavily inhabited Downtown, Pico-Union, and Westlake, but then proceeds southeast into neighborhoods such as Boyle Heights and Huntington Park that again are characterized by single-unit homes. It slightly exceeds old Assembly District 48 in both overall (0.89) and urban/suburban (1.01) spatial diversity.[125]

What makes this story more interesting—and the lack of improvement between districts more surprising—is that in its *draft* plan, released in June 2011, the Commission *did* manage to draw a spatially homogeneous district in this region.[126] Draft Assembly District LADNT retained Downtown, East Hollywood, Koreatown, Pico-Union, and Westlake, but also incorporated dense urban areas such as Hollywood, Larchmont and Mid-Wilshire. Its overall spatial diversity (0.83) was thus somewhat lower than old District 48's or new District 53's, and its urban/suburban heterogeneity (0.59) was much lower.[127]

Why did the Commission redraw a perfectly fine provisional district? The district's own racial composition is not the answer, as each of its variants (old, draft, and new) had a Hispanic majority. A more likely explanation is that, in response to criticism of its draft assembly plan, the Commission sought to increase the number of Hispanic-majority districts elsewhere in Los Angeles. It succeeded in doing so—these districts jumped in number between the draft and final plans[128]—but one of the apparent side effects was an increase in the overall level of spatial diversity. Notably, the draft assembly plan was the only one of the three provisional maps to be more spatially homogeneous, on average, than the final set of districts. Draft District LADNT thus seems to have been a casualty of the Commission's effort to ensure greater representation in the Assembly for California's Hispanics. Here, at least, district-community congruence *was* in tension with another important redistricting goal.

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124. *See infra* Appendix, Table 8.

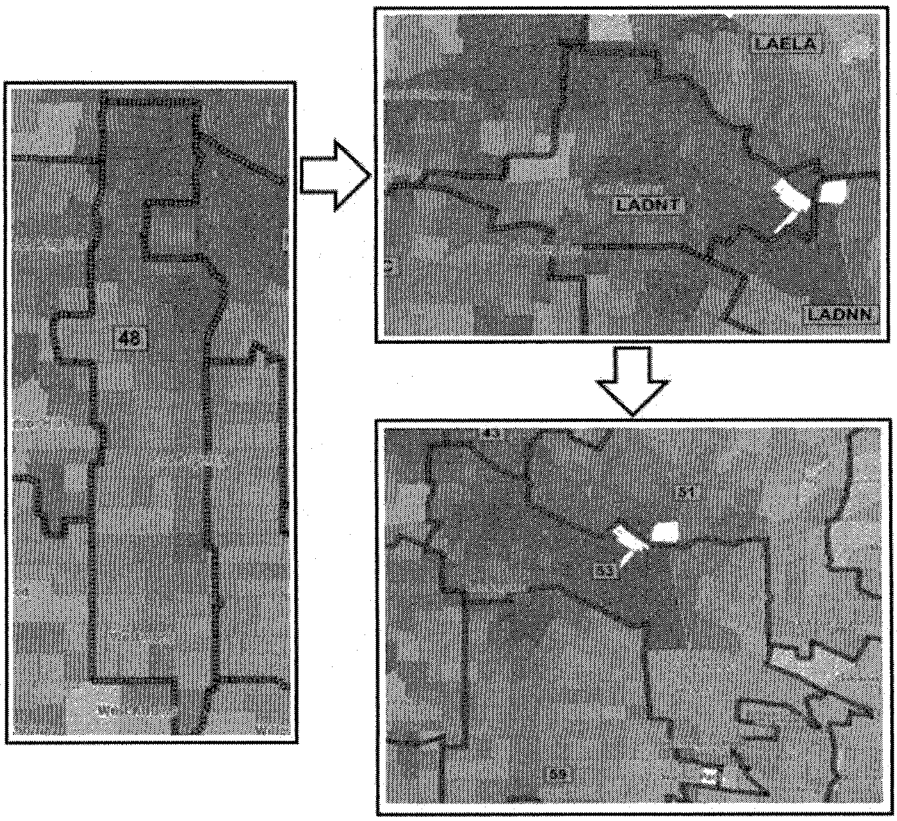
125. *See infra* Appendix, Table 7.

126. *See Maps: First Draft*, CALIFORNIA CITIZENS REDISTRICTING COMMISSION, http://wedrawthelines.ca.gov/maps-first-drafts.html (last visited Feb. 14, 2012).

127. Spatial diversity scores for the draft districts are on file with the author. Draft District LADNT was also more geographically compact and (slightly) more electorally competitive than old District 48 and new District 53.

128. *See* Kogan & McGhee, *supra* note 9, at 10 (noting that number of Hispanic-majority assembly districts increased from ten to fourteen between draft and final plans).

Figure 15: Urban/Suburban Maps (Old, Draft, and New Assembly Plans)



CONCLUSION

In recent years, the idea that California might represent America's future has been associated more with Cassandra than with Pollyanna. In the context of redistricting, however, the prospect that America could eventually come to resemble California is cause for optimism, not gloom. As other scholars have found, the new California districts—drawn by an independent commission rather than a self-interested legislature—are more compact, competitive, politically fair, and conducive to minority representation than their predecessors.[129] And as this Article has demonstrated, the new districts also are more congruent

129. *See* Kogan & McGhee, *supra* note 9.

with geographic communities of interest than the districts they replaced. These gains are not overwhelming in magnitude, but they are quite real, and there is every reason to think that they could be realized in other states as well—if they too abandoned legislative redistricting in favor of California's new model. Of course, commission-crafted districts do not guarantee the optimization of every criterion; one of this Article's findings is that California's level of district-community congruence easily could have been higher still. But the evidence that commissioners draw better districts than politicians, by just about every objective standard, is becoming harder and harder to ignore.

In addition to evaluating California's new redistricting regime, this Article has sought to introduce, and to employ, a methodology for determining how closely districts correspond to geographic communities. This sort of analysis has not previously been conducted; instead, scholars have settled for relatively poor proxies for communities such as political subdivisions. But since almost half the states require their districts to coincide with communities,[130] and since the country is currently in the throes of a redistricting cycle, the need for better measures of district-community congruence is clear. So it is my hope that the idea of appraising districts based on the heterogeneity of their constituent census tracts will be applied soon to states beyond California. The concept of spatial diversity has implications for almost every district plan, and it warrants a place in the redistricting toolkit.

130. *See* NCSL REPORT, *supra* note 7, at 125-27.

APPENDIX

Table 1: Results of American Community Survey Factor Analysis

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	SES Status / Hispanic	Urban / Suburban	Asian-American	Exurban Sprawl	African-American	Age
Variance Explained	26.4%	13.4%	9.9%	5.7%	4.3%	4.1%
Income						
Household Income < $15K %		-0.66				
Household Income > $150K %	0.71	0.45				
Median Household Income	0.66	0.60				
Under Poverty Level %	-0.57	-0.56				
Unemployment %	-0.47					
Education						
Grad. Degree %	0.84					
> HS Grad. %	0.89					
> Bach. Degree %	0.92					
Occupation / Industry						
Occupation — Management %	0.93					
Occupation — Service %	-0.58	-0.40				
Occupation — Sales %						0.42
Occupation — Construction %	-0.69					
Occupation — Production %	-0.80					
Industry — Agriculture %					0.42	
Industry — Construction %	-0.47					
Industry — Manufacturing %						
Industry — Wholesale Trade %						
Industry — Retail Trade %						

Industry — Transportation %						
Industry — Information %	0.47					
Industry — Finance / Real Estate %	0.55					
Industry — Professional %	0.57					
Industry — Education / Health %						
Industry — Entertainment / Hotel / Food %		-0.48				
Industry — Other Services %						
Industry — Public Admin. %				0.50		
Household						
Married Household %		0.88				
Nonfamily Household %	0.48	-0.75				
Avg. Household Size	-0.76	0.41				
Housing						
Housing Vacancy %						
Detached 1-Unit %		0.83				
20+-Unit %		-0.64				
Housing Built After 2000 %						
Housing Built 1950-70 %						
Housing Built Before 1950 %						
Median Rooms		0.88				
Owner-Occupied %		0.88				
Renter-Occupied %		-0.88				
Race						
Asian Indian %			-0.47			
Chinese %			-0.65			
Filipino %			-0.52			
Japanese %						
Korean %						
Vietnamese %			-0.48			
Other Asian %						
White %	0.41		0.69			
Black %					-0.78	
Am. Indian %						

Asian %			-0.93			
Hawaiian %						
Other Race %	-0.75					
Hispanic %	-0.89					
Mexican %	-0.88					
Puerto Rican %						
Cuban %						
Other Hispanic %				-0.53		
Ethnicity						
American %						
Arab %						
Czech %						
Danish %						
Dutch %						
English %	0.63		0.47			
French %	0.50					
French Canadian %						
German %	0.60		0.49			
Greek %						
Hungarian %						
Irish %	0.60		0.48			
Italian %	0.60					
Lithuanian %						
Norwegian %	0.45					
Polish %	0.59					
Portuguese %						
Russian %	0.54					
Scotch-Irish %	0.43					
Scottish %	0.53					
Slovak %						
Sub-Saharan African %					-0.47	
Swedish %	0.46					
Swiss %						
Ukrainian %						
Welsh %						
West Indian %						
Age						
Median Age	0.62					0.54
< 18 %	-0.66					
> 65 %						0.57
Other						

Veteran %						
Moved Last Year %		-0.49				
Born in State %			0.52	0.41		
Foreign-Born %	-0.45		-0.69			
Public Transit Commute %		-0.48				
Mean Commute Time						
Population Density		-0.51		-0.41		

7,930 census tracts incorporated into factor analysis.
6 retained factors explain 63.9% of variance in data.
Only loadings greater than 0.4 or less than -0.4 displayed.

Table 2: Results of Popular Initiative Factor Analysis

	Factor 1	Factor 2	Factor 3
	Fiscal Views	Social / Cultural Views	Gaming Views
Variance Explained	42.8%	31.5%	12.9%
June 2006			
Prop. 81 (education)	0.82		
Prop. 82 (education)	0.91		
Nov. 2006			
Prop. 1A (transportation)			0.53
Prop. 1B (transportation)	0.77		
Prop. 1C (housing)	0.94		
Prop. 1D (education)	0.89		
Prop. 1E (environment)	0.75		
Prop. 83 (crime)		0.78	0.48
Prop. 84 (environment)	0.87		
Prop. 85 (abortion)		0.89	
Prop. 86 (taxes)	0.60	-0.62	
Prop. 87 (energy)	0.66	-0.70	
Prop. 88 (education)	0.75	-0.43	
Prop. 89 (campaigns)	0.54	-0.72	
Prop. 90 (environment)	-0.53	0.60	
Feb. 2008			
Prop. 91 (transportation)		0.69	0.43
Prop. 92 (education)	0.94		
Prop. 93 (term limits)	0.87		
Prop. 94 (gaming)			0.88
Prop. 95 (gaming)			0.88
Prop. 96 (gaming)			0.88
Prop. 97 (gaming)			0.88
June 2008			
Prop. 98 (property)	-0.54		
Prop. 99 (property)	0.58	0.55	
Nov. 2008			
Prop. 1A (transportation)	0.82	-0.43	
Prop. 2 (environment)	0.64	-0.56	
Prop. 3 (children)	0.93		

Prop. 4 (abortion)		0.93	
Prop. 5 (crime)	0.73	-0.47	
Prop. 6 (crime)		0.74	
Prop. 7 (energy)	0.72		
Prop. 8 (marriage)		0.94	
Prop. 9 (crime)		0.86	
Prop. 10 (environment)	0.83		
Prop. 11 (redistricting)	-0.73		
Prop. 12 (veterans)	0.72		
June 2010			
Prop. 13 (taxes)	-0.55		
Prop. 14 (elections)			
Prop. 15 (elections)	0.62	-0.58	
Prop. 16 (elections)		0.74	0.41
Prop. 17 (regulation)		0.65	0.41
Nov. 2010			
Prop. 19 (marijuana)		-0.79	
Prop. 20 (redistricting)	-0.88		
Prop. 21 (taxes)		-0.83	
Prop. 22 (spending)		0.69	
Prop. 23 (environment)	-0.66	0.68	
Prop. 24 (taxes)	0.83	-0.41	
Prop. 25 (spending)	0.75	-0.53	
Prop. 26 (taxes)	-0.59	0.70	
Prop. 27 (elections)	0.93		

7,963 census tracts incorporated into factor analysis.
3 retained factors explain 87.2% of variance in data.
Only loadings greater than 0.4 or less than -0.4 displayed.

Table 3: Spatial Diversity Scores for New Congressional Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.40	0.71	0.32	0.58	0.50	0.79	0.50	0.41	0.83	0.55	0.58
2	0.68	0.70	0.39	1.10	0.55	0.67	0.67	0.40	0.97	0.67	0.64
3	0.65	0.80	0.73	0.62	0.90	0.96	0.73	0.60	0.97	0.57	0.73
4	0.42	0.77	0.44	0.51	0.56	1.10	0.56	0.40	0.49	0.62	0.47
5	0.53	0.72	0.92	0.56	1.07	0.68	0.68	0.64	0.57	0.85	0.64
6	0.72	0.80	0.81	0.56	0.74	0.70	0.74	0.65	0.84	0.48	0.69
7	0.52	0.76	0.98	0.63	0.67	0.80	0.68	0.67	0.45	0.42	0.55
8	0.55	0.76	0.37	0.70	0.80	0.89	0.62	0.67	0.44	0.60	0.58
9	0.64	0.77	0.83	0.63	1.04	0.76	0.73	0.81	0.41	0.55	0.63
10	0.57	0.61	0.54	0.38	0.69	0.72	0.57	0.69	0.35	0.51	0.54
11	0.94	0.93	0.73	0.58	0.93	0.91	0.87	0.84	0.78	0.62	0.79
12	0.85	1.03	1.27	0.76	0.83	1.27	0.97	0.58	0.92	0.76	0.73
13	1.06	1.09	0.89	0.78	1.19	0.97	1.02	0.64	1.17	0.64	0.83
14	0.76	0.79	1.15	0.62	0.72	0.92	0.82	0.73	0.66	0.59	0.68
15	0.75	0.78	1.31	0.53	0.72	1.03	0.84	0.73	0.38	0.54	0.58
16	0.56	0.72	0.60	0.57	0.94	0.80	0.64	0.80	0.45	0.45	0.62
17	0.69	0.85	1.08	0.54	0.56	1.16	0.79	0.56	0.56	0.46	0.55
18	0.77	1.04	0.95	0.70	0.50	0.79	0.83	0.59	0.73	0.46	0.62
19	0.81	0.93	1.20	0.55	0.50	0.72	0.85	0.81	0.73	0.42	0.73
20	1.05	0.78	0.51	0.51	0.98	1.16	0.87	0.70	1.00	0.64	0.80
21	0.65	0.49	0.38	0.60	1.22	1.11	0.64	0.94	0.29	0.58	0.65
22	0.86	0.70	0.43	0.44	1.06	0.98	0.74	0.74	0.49	0.45	0.61
23	0.66	0.77	0.40	0.54	0.90	0.96	0.67	0.70	0.33	0.47	0.54
24	0.80	1.00	0.40	0.75	0.78	1.07	0.79	0.73	1.03	0.62	0.82
25	0.78	0.76	0.52	0.62	0.73	0.64	0.71	0.66	0.44	0.47	0.55
26	1.01	0.74	0.56	0.67	0.66	0.82	0.82	0.89	0.59	0.48	0.72
27	0.73	0.87	1.58	0.63	0.76	1.00	0.90	0.85	0.65	0.42	0.72
28	0.84	1.21	0.61	0.69	0.43	0.78	0.84	0.98	0.88	0.44	0.87
29	0.81	0.94	0.46	0.56	0.48	0.54	0.72	0.65	0.52	0.40	0.56
30	0.81	1.00	0.60	0.58	0.43	0.64	0.76	0.56	0.64	0.36	0.56
31	0.77	0.84	0.46	0.53	0.73	0.52	0.70	0.80	0.28	0.37	0.55
32	0.75	0.61	0.77	0.58	0.66	0.56	0.69	0.83	0.22	0.42	0.55
33	0.57	1.27	0.81	0.79	0.42	0.73	0.77	0.75	0.83	0.47	0.74

34	0.81	1.01	0.98	0.98	0.66	0.81	0.88	0.52	0.54	0.52	0.53
35	0.63	0.65	0.50	0.55	0.80	0.53	0.61	0.63	0.30	0.39	0.47
36	0.87	0.67	0.33	0.58	0.77	1.49	0.75	0.80	0.65	0.97	0.77
37	1.18	0.78	0.52	0.85	1.73	0.72	0.97	0.72	1.07	1.00	0.89
38	0.70	0.64	1.02	0.66	0.67	0.52	0.72	0.78	0.27	0.46	0.55
39	0.66	0.80	1.21	0.47	0.43	0.64	0.74	0.73	0.27	0.40	0.51
40	0.51	0.54	0.23	0.60	0.69	0.45	0.49	0.66	0.22	0.53	0.48
41	0.71	0.75	0.40	0.59	0.85	0.61	0.66	0.63	0.40	0.35	0.51
42	0.54	0.65	0.51	0.53	0.75	1.03	0.60	0.50	0.21	0.43	0.39
43	0.88	0.74	0.87	0.62	1.59	0.78	0.87	1.01	0.53	1.00	0.84
44	0.63	0.66	0.65	0.77	1.27	0.62	0.70	0.57	0.35	0.94	0.54
45	0.67	0.94	0.83	0.66	0.39	1.14	0.76	0.63	0.52	0.47	0.57
46	0.70	0.61	0.53	0.68	0.53	0.64	0.64	0.86	0.27	0.45	0.59
47	0.79	0.96	1.01	0.54	0.93	0.74	0.84	0.98	0.79	0.38	0.82
48	0.88	0.87	1.23	0.68	0.57	1.18	0.91	0.83	0.70	0.40	0.72
49	0.77	0.82	0.56	0.88	0.61	0.88	0.75	0.60	0.73	0.44	0.62
50	0.57	0.80	0.48	0.50	0.57	0.70	0.61	0.59	0.39	0.77	0.54
51	0.57	0.93	0.63	0.65	0.74	0.69	0.68	0.73	0.60	0.68	0.67
52	0.53	1.18	1.04	0.86	0.53	1.05	0.81	0.62	0.70	0.51	0.63
53	0.62	1.07	0.84	0.58	0.71	0.64	0.75	0.69	0.99	0.64	0.79
Min	0.40	0.49	0.23	0.38	0.39	0.45	0.49	0.40	0.21	0.35	0.39
Median	0.71	0.78	0.63	0.60	0.72	0.79	0.74	0.69	0.56	0.48	0.62
Mean	0.72	0.82	0.72	0.63	0.76	0.83	0.74	0.70	0.59	0.55	0.64
Max	1.18	1.27	1.58	1.10	1.73	1.49	1.02	1.01	1.17	1.00	0.89
St. Dev.	0.16	0.17	0.31	0.13	0.28	0.22	0.12	0.14	0.25	0.17	0.12

Table 4: Spatial Diversity Scores for Old Congressional Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.61	0.76	0.65	0.76	0.69	1.05	0.70	0.44	0.88	0.64	0.63
2	0.49	0.70	0.57	0.48	0.53	0.86	0.57	0.46	0.75	0.47	0.57
3	0.47	0.74	0.92	0.58	0.71	0.89	0.65	0.56	0.46	0.55	0.52
4	0.45	0.78	0.44	0.66	0.58	1.04	0.59	0.42	0.60	0.59	0.51
5	0.72	0.77	0.86	0.56	0.74	0.67	0.74	0.63	0.83	0.47	0.68
6	0.74	0.68	0.35	0.76	0.48	0.70	0.65	0.40	0.76	0.70	0.57
7	0.64	0.79	0.84	0.67	0.92	0.63	0.72	0.80	0.59	0.44	0.67
8	0.89	1.00	1.29	0.77	0.87	1.30	0.99	0.55	0.96	0.77	0.73
9	1.07	1.16	0.85	0.76	1.21	0.92	1.03	0.70	1.19	0.69	0.88
10	0.77	0.83	0.72	0.72	0.88	0.89	0.79	0.58	0.82	0.57	0.67
11	0.76	0.74	0.86	0.69	0.75	0.83	0.77	0.58	0.68	0.64	0.62
12	0.68	0.82	1.16	0.61	0.68	0.91	0.79	0.66	0.70	0.66	0.68
13	0.75	0.84	1.21	0.54	0.80	1.05	0.84	0.60	0.52	0.47	0.55
14	0.89	0.97	1.20	0.71	0.57	0.90	0.92	0.63	0.73	0.45	0.64
15	0.70	0.86	1.44	0.57	0.51	0.92	0.84	0.61	0.60	0.42	0.58
16	0.86	0.94	1.20	0.58	0.49	0.80	0.88	0.85	0.74	0.39	0.74
17	1.07	0.79	0.53	0.52	0.98	1.18	0.88	0.70	1.01	0.62	0.80
18	0.59	0.68	0.67	0.56	0.96	0.80	0.66	0.82	0.37	0.46	0.61
19	0.72	0.68	0.49	0.42	0.94	1.13	0.69	0.71	0.54	0.49	0.62
20	0.62	0.64	0.51	0.63	1.21	1.05	0.68	0.89	0.43	0.55	0.68
21	0.78	0.64	0.47	0.46	1.09	1.04	0.71	0.80	0.42	0.44	0.61
22	0.74	0.84	0.41	0.59	0.88	1.01	0.72	0.75	0.73	0.41	0.69
23	0.98	1.01	0.57	0.84	0.87	1.09	0.91	0.81	1.05	0.49	0.85
24	0.82	0.74	0.41	0.67	0.59	0.84	0.71	0.63	0.64	0.72	0.65
25	0.70	0.77	0.42	0.84	0.82	0.78	0.70	0.73	0.58	0.54	0.65
26	0.69	0.82	1.12	0.58	0.69	0.67	0.77	0.66	0.64	0.36	0.61
27	0.82	0.92	0.52	0.53	0.47	0.54	0.73	0.70	0.47	0.37	0.57
28	1.28	1.00	0.49	0.59	0.44	0.64	0.94	0.63	0.88	0.38	0.69
29	0.68	0.90	1.34	0.69	0.70	0.91	0.85	0.75	0.56	0.40	0.63
30	0.46	1.44	0.62	0.77	0.41	0.72	0.73	0.69	0.62	0.41	0.62
31	0.86	0.94	0.72	1.03	0.58	0.77	0.85	0.52	0.72	0.54	0.59
32	0.66	0.58	1.14	0.67	0.69	0.72	0.72	0.68	0.23	0.41	0.48
33	1.02	0.90	0.93	0.86	1.65	0.92	1.00	0.60	1.02	0.90	0.80

34	0.68	1.00	0.63	0.85	0.79	0.62	0.76	0.71	0.43	0.53	0.58
35	0.90	0.66	0.55	0.68	1.54	0.66	0.81	0.75	0.53	0.96	0.70
36	1.07	0.94	0.97	0.58	0.55	0.85	0.94	0.93	0.93	0.42	0.85
37	0.83	0.90	0.78	0.67	1.17	0.65	0.83	0.80	0.70	0.96	0.79
38	0.69	0.61	0.86	0.54	0.56	0.57	0.67	0.71	0.25	0.39	0.49
39	0.83	0.59	0.94	0.81	0.61	0.58	0.76	0.99	0.24	0.46	0.64
40	0.73	0.74	0.85	0.48	0.42	0.66	0.70	0.76	0.31	0.46	0.55
41	0.58	0.67	0.50	0.58	0.66	0.86	0.61	0.63	0.43	0.63	0.56
42	0.65	0.67	1.15	0.46	0.50	0.74	0.71	0.65	0.30	0.46	0.49
43	0.55	0.77	0.38	0.52	0.84	0.51	0.58	0.59	0.20	0.40	0.42
44	0.86	0.83	0.49	0.58	0.74	0.67	0.75	0.79	0.40	0.37	0.59
45	0.80	0.80	0.41	0.58	1.05	1.37	0.77	0.82	0.55	0.80	0.72
46	0.81	0.91	1.27	0.60	0.64	0.97	0.88	0.80	0.71	0.36	0.70
47	0.63	0.61	0.87	0.77	0.54	0.79	0.68	0.70	0.32	0.40	0.52
48	0.71	0.87	0.92	0.64	0.40	1.12	0.78	0.58	0.54	0.45	0.55
49	0.68	0.74	0.38	0.74	0.73	0.95	0.67	0.69	0.41	0.58	0.57
50	0.81	0.84	0.92	0.65	0.44	0.93	0.80	0.50	0.76	0.56	0.60
51	0.57	0.81	0.74	0.61	0.80	0.71	0.67	0.71	0.54	0.70	0.65
52	0.57	0.83	0.73	0.62	0.60	0.81	0.67	0.64	0.61	0.78	0.65
53	1.04	0.97	0.77	0.71	0.68	0.80	0.92	0.77	1.04	0.65	0.85
Min	0.45	0.58	0.35	0.42	0.40	0.51	0.57	0.40	0.20	0.36	0.42
Median	0.73	0.81	0.74	0.63	0.69	0.84	0.75	0.69	0.60	0.49	0.63
Mean	0.75	0.82	0.77	0.65	0.75	0.85	0.77	0.68	0.62	0.54	0.64
Max	1.28	1.44	1.44	1.03	1.65	1.37	1.03	0.99	1.19	0.96	0.88
St. Dev.	0.17	0.15	0.29	0.12	0.27	0.19	0.11	0.12	0.23	0.15	0.10

Table 5: Spatial Diversity Scores for New Senate Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.43	0.80	0.47	0.65	0.53	0.95	0.57	0.40	0.69	0.74	0.56
2	0.70	0.68	0.39	1.03	0.53	0.74	0.67	0.42	0.93	0.66	0.64
3	0.62	0.79	0.84	0.69	1.01	0.86	0.74	0.60	0.83	0.72	0.70
4	0.53	0.76	0.53	0.56	0.67	0.89	0.62	0.48	0.68	0.61	0.57
5	0.59	0.73	0.78	0.52	0.85	0.73	0.67	0.78	0.37	0.52	0.59
6	0.69	0.88	0.90	0.57	0.74	0.71	0.76	0.67	0.78	0.48	0.68
7	0.79	0.86	0.76	0.57	0.80	0.94	0.79	0.67	0.65	0.48	0.63
8	0.59	0.76	0.69	0.49	0.67	1.01	0.67	0.70	0.46	0.56	0.59
9	1.04	1.07	0.84	0.74	1.15	0.92	0.99	0.63	1.20	0.67	0.84
10	0.71	0.81	1.33	0.49	0.83	1.11	0.84	0.55	0.44	0.48	0.50
11	0.85	1.14	1.29	0.80	0.88	1.23	1.00	0.57	1.06	0.82	0.78
12	0.59	0.60	0.41	0.48	1.10	0.97	0.62	0.85	0.59	0.64	0.73
13	0.86	0.93	1.02	0.69	0.69	1.08	0.89	0.64	0.74	0.42	0.65
14	0.62	0.60	0.48	0.62	1.12	1.00	0.65	0.93	0.40	0.51	0.67
15	0.95	0.95	1.25	0.58	0.53	0.86	0.93	0.89	0.77	0.42	0.78
16	0.62	0.69	0.41	0.62	0.81	1.02	0.64	0.68	0.35	0.51	0.54
17	0.80	0.95	0.80	0.64	0.63	0.94	0.81	0.74	0.95	0.61	0.80
18	1.08	0.98	0.50	0.60	0.49	0.57	0.86	0.73	0.70	0.39	0.67
19	0.94	0.89	0.54	0.70	0.85	1.00	0.84	0.82	0.95	0.58	0.83
20	0.65	0.69	0.50	0.56	0.84	0.52	0.63	0.65	0.28	0.40	0.48
21	0.65	0.72	0.40	0.68	0.73	0.69	0.64	0.69	0.50	0.47	0.59
22	0.79	0.68	1.27	0.69	0.67	0.76	0.82	0.75	0.30	0.43	0.54
23	0.63	0.79	0.50	0.49	0.75	1.02	0.67	0.70	0.36	0.49	0.54
24	0.89	0.97	0.91	0.88	0.57	0.81	0.88	0.49	0.71	0.51	0.57
25	0.71	0.97	0.62	0.59	0.59	0.71	0.73	0.84	0.68	0.37	0.71
26	0.60	1.35	0.80	0.77	0.48	0.77	0.80	0.84	0.81	0.42	0.77
27	0.77	0.89	0.60	0.60	0.44	0.69	0.72	0.57	0.58	0.41	0.55
28	0.81	0.82	0.40	0.55	0.82	1.29	0.76	0.87	0.55	0.78	0.74
29	0.71	0.80	1.07	0.47	0.52	0.62	0.75	0.73	0.24	0.41	0.51
30	1.15	0.83	0.48	0.88	1.70	0.64	0.96	0.63	0.95	1.03	0.80
31	0.70	0.78	0.45	0.57	0.85	0.63	0.67	0.69	0.36	0.37	0.53
32	0.65	0.65	1.02	0.65	0.56	0.53	0.70	0.74	0.28	0.39	0.52
33	0.91	0.80	0.43	0.96	0.77	0.45	0.78	0.81	0.56	0.45	0.66

34	0.95	0.70	1.10	0.80	0.64	0.99	0.89	0.99	0.61	0.42	0.77
35	0.74	0.79	0.87	0.62	1.46	0.76	0.81	0.81	0.39	0.91	0.67
36	0.69	0.79	0.40	0.75	0.57	0.93	0.68	0.60	0.58	0.41	0.56
37	0.79	0.89	0.84	0.61	0.39	1.04	0.79	0.61	0.56	0.48	0.57
38	0.66	0.80	0.60	0.74	0.66	0.82	0.70	0.65	0.53	0.73	0.62
39	0.62	1.15	0.99	0.82	0.60	0.99	0.83	0.70	0.79	0.49	0.70
40	0.60	0.94	0.72	0.62	0.83	0.66	0.71	0.72	0.58	0.72	0.67
Min	0.43	0.60	0.39	0.47	0.39	0.45	0.57	0.40	0.24	0.37	0.48
Me-dian	0.71	0.80	0.71	0.62	0.71	0.86	0.75	0.70	0.58	0.49	0.64
Mean	0.74	0.84	0.73	0.66	0.76	0.85	0.76	0.70	0.62	0.55	0.65
Max	1.15	1.35	1.33	1.03	1.70	1.29	1.00	0.99	1.20	1.03	0.84
St. Dev.	0.16	0.15	0.28	0.13	0.27	0.20	0.11	0.13	0.23	0.16	0.10

Table 6: Spatial Diversity Scores for Old Senate Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.46	0.79	0.81	0.64	0.72	0.98	0.65	0.55	0.56	0.56	0.55
2	0.52	0.73	0.83	0.68	0.96	0.72	0.67	0.60	0.72	0.87	0.69
3	0.84	1.17	1.08	0.83	0.78	1.06	0.95	0.75	0.88	0.80	0.81
4	0.51	0.76	0.55	0.57	0.55	0.96	0.61	0.45	0.74	0.68	0.59
5	0.70	0.83	0.80	0.62	0.88	0.82	0.75	0.69	0.85	0.49	0.72
6	0.66	0.80	0.87	0.56	0.73	0.72	0.72	0.70	0.77	0.45	0.69
7	0.81	0.86	0.78	0.62	0.87	0.89	0.81	0.69	0.76	0.60	0.70
8	0.73	0.83	1.14	0.64	0.69	0.95	0.82	0.66	0.80	0.70	0.71
9	1.02	1.16	0.84	0.70	1.19	0.90	1.00	0.87	1.13	0.81	0.95
10	0.70	0.80	1.37	0.51	0.87	1.05	0.84	0.61	0.45	0.52	0.54
11	0.78	0.95	1.14	0.70	0.55	0.86	0.85	0.59	0.84	0.47	0.66
12	0.67	0.61	0.44	0.46	0.97	0.97	0.65	0.80	0.59	0.67	0.70
13	0.97	0.95	1.16	0.56	0.50	1.00	0.93	0.78	0.85	0.48	0.76
14	0.65	0.69	0.66	0.43	0.82	0.98	0.67	0.69	0.46	0.51	0.58
15	0.97	0.96	1.04	0.74	0.82	1.15	0.96	0.70	0.84	0.51	0.72
16	0.63	0.63	0.52	0.61	1.23	1.08	0.68	0.90	0.44	0.53	0.68
17	0.72	0.73	0.55	0.73	0.80	0.72	0.70	0.66	0.67	0.46	0.64
18	0.69	0.67	0.40	0.60	1.02	1.12	0.68	0.71	0.37	0.54	0.56
19	0.74	0.97	0.45	0.68	0.56	0.79	0.73	0.71	0.77	0.66	0.72
20	0.74	0.87	0.48	0.59	0.51	0.53	0.69	0.73	0.40	0.39	0.56
21	0.73	0.92	1.03	0.64	0.65	0.76	0.81	0.75	0.69	0.47	0.69
22	0.91	1.03	0.94	1.05	0.65	0.83	0.93	0.67	0.63	0.54	0.63
23	1.17	1.25	0.60	0.99	0.61	0.73	1.01	0.72	1.08	0.43	0.81
24	0.70	0.65	1.15	0.69	0.66	0.74	0.76	0.69	0.36	0.41	0.53
25	0.90	0.80	0.63	0.61	1.43	0.65	0.83	0.99	0.52	0.97	0.82
26	1.16	0.93	0.91	0.83	1.63	0.92	1.06	0.66	1.05	1.01	0.85
27	0.92	0.93	0.88	0.80	0.65	0.58	0.87	0.95	0.65	0.44	0.77
28	1.12	1.00	0.93	0.61	0.95	0.88	1.00	0.93	1.03	0.53	0.90
29	0.65	0.78	1.24	0.50	0.54	0.67	0.75	0.68	0.54	0.37	0.58
30	0.65	0.62	0.66	0.65	0.58	0.56	0.64	0.86	0.23	0.46	0.57
31	0.70	0.83	0.51	0.62	0.74	0.66	0.69	0.65	0.34	0.38	0.50
32	0.62	0.75	0.46	0.59	0.82	0.50	0.63	0.60	0.28	0.40	0.46
33	0.74	0.80	0.81	0.47	0.40	0.94	0.73	0.62	0.38	0.52	0.52

34	0.61	0.60	0.95	0.78	0.62	0.84	0.69	0.68	0.30	0.38	0.50
35	0.74	0.84	1.19	0.61	0.48	1.14	0.83	0.64	0.63	0.40	0.60
36	0.53	0.80	0.75	0.60	0.66	0.83	0.65	0.61	0.53	0.76	0.60
37	0.70	0.82	0.48	0.52	0.94	1.32	0.73	0.65	0.46	0.68	0.59
38	0.80	0.79	0.59	0.73	0.60	0.85	0.75	0.58	0.66	0.54	0.60
39	0.86	1.08	1.02	0.78	0.77	0.86	0.92	0.77	1.00	0.58	0.83
40	0.76	0.84	0.66	0.64	0.88	1.05	0.78	0.78	0.67	0.86	0.75
Min	0.46	0.60	0.40	0.43	0.40	0.50	0.61	0.45	0.23	0.37	0.46
Me-dian	0.73	0.82	0.81	0.63	0.73	0.86	0.75	0.69	0.66	0.53	0.67
Mean	0.76	0.85	0.81	0.66	0.78	0.86	0.79	0.71	0.65	0.57	0.67
Max	1.17	1.25	1.37	1.05	1.63	1.32	1.06	0.99	1.13	1.01	0.95
St. Dev.	0.17	0.15	0.26	0.13	0.26	0.18	0.12	0.11	0.23	0.17	0.12

Table 7: Spatial Diversity Scores for New Assembly Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.32	0.63	0.26	0.62	0.53	0.69	0.44	0.34	0.83	0.64	0.56
2	0.44	0.68	0.37	0.78	0.58	0.75	0.54	0.40	0.83	0.52	0.57
3	0.53	0.74	0.63	0.54	0.57	0.84	0.61	0.50	0.85	0.45	0.62
4	0.70	0.83	0.68	0.65	0.71	1.05	0.74	0.53	0.91	0.60	0.68
5	0.68	0.68	0.38	0.42	0.71	1.30	0.65	0.73	0.60	0.58	0.66
6	0.40	0.74	0.49	0.51	0.43	1.13	0.54	0.34	0.33	0.48	0.36
7	0.75	0.89	0.73	0.53	0.75	0.77	0.76	0.65	0.92	0.53	0.73
8	0.51	0.85	0.72	0.54	0.56	0.69	0.63	0.53	0.47	0.35	0.48
9	0.63	0.67	0.89	0.53	0.93	0.75	0.70	0.73	0.58	0.43	0.63
10	0.79	0.68	0.35	0.78	0.45	0.66	0.67	0.39	0.78	0.72	0.58
11	0.40	0.67	0.60	0.54	0.85	0.76	0.56	0.60	0.27	0.45	0.46
12	0.44	0.54	0.49	0.35	0.62	0.66	0.49	0.62	0.28	0.50	0.48
13	0.63	0.81	0.80	0.63	0.97	0.69	0.72	0.71	0.42	0.53	0.58
14	0.76	0.92	0.86	0.70	0.92	0.62	0.80	0.70	0.59	0.40	0.62
15	1.03	1.19	0.77	0.84	1.08	0.93	1.00	0.59	1.36	0.80	0.90
16	0.44	0.85	0.88	0.55	0.50	1.05	0.65	0.38	0.45	0.51	0.43
17	0.94	1.08	1.28	0.80	0.96	1.42	1.04	0.49	1.03	0.87	0.74
18	0.92	0.95	0.87	0.60	1.20	0.81	0.90	0.62	0.87	0.45	0.69
19	0.77	0.95	1.10	0.68	0.76	0.99	0.86	0.58	0.88	0.68	0.70
20	0.75	0.80	1.30	0.53	0.75	1.07	0.85	0.63	0.38	0.45	0.51
21	0.57	0.63	0.47	0.48	0.76	0.73	0.58	0.74	0.34	0.41	0.55
22	0.76	0.80	0.89	0.56	0.53	0.78	0.75	0.58	0.56	0.41	0.55
23	0.72	0.83	0.58	0.52	0.84	0.92	0.73	0.74	0.40	0.40	0.57
24	0.90	1.01	1.10	0.80	0.61	0.91	0.93	0.67	0.78	0.41	0.67
25	0.66	0.89	1.22	0.45	0.52	1.21	0.80	0.52	0.50	0.52	0.51
26	0.73	0.52	0.33	0.46	1.04	1.30	0.66	0.77	0.40	0.45	0.59
27	0.80	0.99	1.15	0.58	0.48	0.81	0.85	0.64	0.74	0.44	0.65
28	0.56	0.93	1.23	0.51	0.57	0.76	0.75	0.43	0.37	0.33	0.39
29	0.70	0.93	0.78	0.59	0.60	0.85	0.75	0.59	0.90	0.66	0.71
30	0.86	0.68	0.40	0.44	1.02	0.99	0.73	0.80	0.50	0.52	0.65
31	0.57	0.67	0.58	0.61	1.22	1.06	0.67	0.92	0.47	0.46	0.69
32	0.74	0.55	0.44	0.63	1.17	1.10	0.70	0.96	0.34	0.58	0.68
33	0.47	0.69	0.33	0.69	0.84	0.88	0.56	0.67	0.38	0.59	0.55

34	0.59	0.77	0.44	0.48	0.64	0.98	0.62	0.61	0.30	0.32	0.45
35	0.80	0.92	0.39	0.56	0.91	1.21	0.77	0.70	0.85	0.52	0.73
36	0.62	0.76	0.37	0.81	0.79	0.63	0.64	0.73	0.30	0.39	0.52
37	0.77	0.99	0.48	0.63	0.56	0.76	0.74	0.71	0.90	0.69	0.78
38	0.56	0.73	0.59	0.49	0.49	0.72	0.60	0.40	0.35	0.38	0.38
39	0.83	0.92	0.43	0.48	0.49	0.60	0.72	0.82	0.43	0.46	0.63
40	0.76	0.87	0.50	0.49	0.68	0.54	0.70	0.78	0.28	0.35	0.54
41	0.76	0.97	0.51	0.56	0.64	0.71	0.73	0.84	0.79	0.35	0.75
42	0.71	0.70	0.35	0.76	0.76	1.31	0.70	0.54	0.61	0.90	0.62
43	0.74	1.10	0.57	0.59	0.43	0.76	0.76	0.91	0.78	0.38	0.79
44	1.09	0.74	0.52	0.76	0.70	0.81	0.86	1.00	0.57	0.53	0.77
45	0.85	0.93	0.54	0.62	0.44	0.66	0.76	0.57	0.58	0.38	0.55
46	1.17	0.84	0.54	0.62	0.46	0.61	0.87	0.63	0.82	0.38	0.66
47	0.61	0.73	0.41	0.50	0.87	0.48	0.60	0.51	0.19	0.36	0.37
48	0.71	0.59	0.60	0.59	0.64	0.48	0.64	0.86	0.18	0.38	0.54
49	0.79	0.71	0.98	0.61	0.50	0.81	0.77	0.78	0.32	0.48	0.57
50	0.55	1.40	0.53	0.62	0.50	0.67	0.73	0.66	0.51	0.48	0.58
51	0.86	0.70	0.81	0.70	0.60	0.65	0.77	0.50	0.72	0.50	0.58
52	0.68	0.63	0.52	0.59	0.76	0.53	0.63	0.70	0.33	0.41	0.52
53	0.82	1.01	1.00	0.96	0.69	0.80	0.89	0.37	0.50	0.50	0.43
54	1.06	0.84	0.56	0.77	1.84	0.77	0.95	0.72	1.07	0.90	0.87
55	0.64	0.75	1.27	0.45	0.47	0.65	0.73	0.79	0.23	0.43	0.53
56	0.79	0.64	0.31	0.66	0.88	1.42	0.72	0.81	0.68	1.11	0.81
57	0.70	0.58	0.98	0.53	0.59	0.56	0.69	0.83	0.23	0.43	0.55
58	0.69	0.64	1.02	0.73	0.61	0.53	0.72	0.64	0.26	0.43	0.47
59	0.63	0.79	0.30	0.93	1.49	0.49	0.69	0.20	0.41	1.04	0.40
60	0.64	0.73	0.49	0.54	0.79	0.63	0.64	0.60	0.18	0.39	0.42
61	0.74	0.81	0.40	0.57	0.83	0.61	0.69	0.68	0.48	0.34	0.56
62	1.09	0.77	0.41	0.57	1.74	0.59	0.88	0.95	1.07	1.07	1.01
63	0.77	0.55	0.43	0.91	0.79	0.48	0.66	0.85	0.24	0.45	0.57
64	0.54	0.65	0.76	0.61	1.36	0.68	0.67	0.39	0.19	1.03	0.41
65	0.65	0.71	0.80	0.42	0.40	0.52	0.64	0.61	0.26	0.40	0.45
66	0.81	0.83	1.05	0.54	0.68	0.84	0.82	0.85	0.66	0.47	0.72
67	0.56	0.66	0.41	0.47	0.61	1.07	0.59	0.49	0.21	0.44	0.38
68	0.78	0.75	0.74	0.49	0.38	0.72	0.71	0.65	0.31	0.50	0.51
69	0.69	0.64	0.48	0.68	0.54	0.60	0.63	0.83	0.31	0.46	0.59
70	0.90	0.97	0.70	0.58	0.67	0.56	0.82	1.00	0.69	0.40	0.80
71	0.52	0.80	0.53	0.48	0.74	0.76	0.61	0.65	0.42	0.75	0.59
72	0.80	0.66	1.30	0.59	0.63	0.93	0.83	0.92	0.54	0.38	0.70
73	0.44	0.82	0.43	0.41	0.40	1.08	0.55	0.39	0.31	0.34	0.35
74	0.65	0.92	0.95	0.70	0.38	1.26	0.78	0.57	0.53	0.40	0.53

75	0.61	0.81	0.39	0.50	0.66	0.70	0.62	0.55	0.36	0.68	0.50
76	0.77	0.71	0.35	0.90	0.69	0.77	0.70	0.52	0.75	0.46	0.59
77	0.49	0.70	1.00	0.75	0.49	1.08	0.67	0.54	0.46	0.48	0.50
78	0.73	1.05	0.78	0.87	0.52	0.85	0.81	0.67	0.80	0.48	0.69
79	0.65	0.98	0.89	0.60	0.79	0.71	0.76	0.81	0.75	0.68	0.77
80	0.63	0.99	0.56	0.53	0.66	0.54	0.68	0.58	0.57	0.54	0.57
Min	0.32	0.52	0.26	0.35	0.38	0.48	0.44	0.20	0.18	0.32	0.35
Me-dian	0.70	0.78	0.58	0.59	0.67	0.76	0.71	0.65	0.50	0.46	0.58
Mean	0.70	0.80	0.67	0.61	0.73	0.81	0.72	0.65	0.54	0.52	0.59
Max	1.17	1.40	1.30	0.96	1.84	1.42	1.04	1.00	1.36	1.11	1.01
St. Dev.	0.17	0.16	0.28	0.13	0.28	0.23	0.11	0.17	0.26	0.18	0.13

Table 8: Spatial Diversity Scores for Old Assembly Districts

District	ACS Factor 1	ACS Factor 2	ACS Factor 3	ACS Factor 4	ACS Factor 5	ACS Factor 6	ACS Overall	PI Factor 1	PI Factor 2	PI Factor 3	PI Overall
	SES Status / Hispanic	Urban / Suburban	Asian - American	Exurban Sprawl	African-American	Age		Fiscal Views	Social / Cultural Views	Gaming Views	
1	0.40	0.66	0.35	0.77	0.60	0.69	0.51	0.38	0.89	0.60	0.60
2	0.50	0.60	0.61	0.46	0.53	0.84	0.56	0.41	0.55	0.46	0.47
3	0.46	0.78	0.43	0.68	0.55	0.92	0.58	0.50	0.94	0.49	0.66
4	0.47	0.77	0.48	0.47	0.67	1.07	0.58	0.52	0.40	0.49	0.47
5	0.55	0.92	0.67	0.59	0.58	0.90	0.67	0.68	0.47	0.53	0.58
6	0.74	0.66	0.35	0.78	0.48	0.69	0.65	0.37	0.78	0.69	0.57
7	0.58	0.77	0.92	0.55	1.12	0.68	0.71	0.69	0.62	0.89	0.69
8	0.67	0.89	0.66	0.62	0.79	0.99	0.74	0.51	1.02	0.45	0.68
9	0.81	0.72	0.85	0.55	0.82	0.55	0.76	0.63	0.99	0.38	0.73
10	0.58	0.71	0.93	0.60	0.83	0.87	0.70	0.74	0.52	0.58	0.63
11	0.67	0.82	0.67	0.54	0.88	0.62	0.70	0.61	0.53	0.37	0.54
12	0.76	0.84	0.89	0.65	0.72	0.97	0.80	0.54	0.83	0.58	0.65
13	0.87	0.94	1.19	0.77	0.96	1.34	0.96	0.59	0.80	0.92	0.72
14	0.99	1.17	0.73	0.77	1.01	1.05	0.97	0.80	1.23	0.88	0.96
15	0.75	0.74	0.93	0.83	0.74	1.00	0.80	0.59	0.68	0.49	0.61
16	1.09	1.00	0.89	0.73	1.18	0.83	1.00	0.70	0.96	0.50	0.77
17	0.58	0.76	0.71	0.62	1.04	0.69	0.68	0.80	0.39	0.53	0.61
18	0.72	0.83	0.81	0.43	0.96	0.91	0.76	0.73	0.46	0.56	0.61
19	0.66	0.74	1.19	0.63	0.67	0.90	0.77	0.64	0.64	0.45	0.61
20	0.60	0.76	1.35	0.55	0.72	1.06	0.78	0.54	0.39	0.48	0.47
21	0.93	1.07	0.87	0.67	0.58	0.79	0.90	0.71	0.74	0.54	0.69
22	0.61	0.89	1.04	0.62	0.48	1.05	0.76	0.49	0.63	0.41	0.53
23	0.75	0.91	1.02	0.56	0.48	0.69	0.79	0.64	0.74	0.45	0.65
24	0.58	0.86	1.19	0.51	0.51	0.65	0.73	0.54	0.51	0.31	0.50
25	0.51	0.57	0.49	0.38	0.57	0.95	0.54	0.63	0.47	0.48	0.55
26	0.63	0.65	0.77	0.50	0.87	0.70	0.66	0.79	0.43	0.47	0.61
27	0.71	0.95	0.64	0.59	0.61	0.89	0.74	0.61	0.94	0.67	0.74
28	0.84	0.75	1.12	0.47	1.02	1.01	0.86	0.75	0.36	0.48	0.57
29	0.82	0.83	0.51	0.48	0.95	1.01	0.76	0.79	0.45	0.44	0.62
30	0.74	0.60	0.42	0.56	1.26	1.28	0.72	1.06	0.33	0.64	0.74
31	0.55	0.66	0.54	0.58	1.19	0.94	0.64	0.86	0.48	0.40	0.66
32	0.73	0.74	0.41	0.51	0.78	1.04	0.69	0.77	0.32	0.38	0.55
33	0.80	0.92	0.39	0.55	0.91	1.21	0.77	0.69	0.85	0.43	0.71

34	0.68	0.57	0.33	0.66	1.13	1.19	0.66	0.68	0.41	0.55	0.56
35	0.92	0.99	0.58	0.67	0.65	0.78	0.83	0.81	0.96	0.71	0.85
36	0.54	0.74	0.36	0.66	0.79	0.67	0.59	0.71	0.38	0.40	0.55
37	0.75	0.74	0.51	0.54	0.55	0.81	0.68	0.55	0.49	0.47	0.52
38	0.63	0.73	0.58	0.54	0.49	0.72	0.63	0.58	0.33	0.40	0.46
39	0.50	0.83	0.46	0.57	0.49	0.57	0.57	0.57	0.28	0.40	0.44
40	0.79	0.90	0.46	0.58	0.47	0.52	0.71	0.66	0.41	0.37	0.53
41	1.15	1.12	0.54	0.96	0.58	0.70	0.96	0.73	1.03	0.48	0.80
42	0.54	1.14	0.57	0.61	0.35	0.68	0.68	0.49	0.44	0.37	0.46
43	0.66	0.84	0.57	0.50	0.37	0.58	0.65	0.65	0.68	0.36	0.62
44	0.81	0.84	1.09	0.60	0.75	0.78	0.83	0.83	0.60	0.34	0.68
45	0.76	0.97	0.85	0.87	0.54	0.84	0.82	0.40	0.69	0.50	0.52
46	0.69	1.03	0.64	0.90	0.63	0.70	0.77	0.29	0.45	0.51	0.38
47	1.03	0.86	0.71	0.75	1.80	0.84	0.96	0.69	1.04	0.90	0.84
48	0.66	0.88	1.05	1.07	1.65	0.82	0.88	0.28	0.57	1.19	0.52
49	0.84	0.69	1.13	0.68	0.54	0.88	0.82	0.70	0.35	0.48	0.54
50	0.52	0.52	0.26	0.70	0.67	0.45	0.50	0.58	0.19	0.45	0.42
51	0.82	0.74	0.61	0.59	1.66	0.76	0.80	0.79	0.57	0.89	0.73
52	0.42	0.54	0.25	0.64	1.10	0.46	0.49	0.34	0.22	0.91	0.38
53	0.58	0.96	1.03	0.56	0.41	0.85	0.73	0.67	0.85	0.43	0.70
54	0.91	1.13	0.75	0.62	0.68	0.57	0.87	1.05	0.59	0.38	0.78
55	0.69	0.89	0.84	0.62	1.22	0.67	0.78	0.82	0.34	0.60	0.62
56	0.67	0.62	1.10	0.70	0.53	0.51	0.71	0.59	0.24	0.31	0.43
57	0.61	0.55	0.56	0.59	0.55	0.43	0.57	0.69	0.17	0.36	0.46
58	0.69	0.66	1.01	0.54	0.56	0.55	0.70	0.85	0.23	0.40	0.56
59	0.64	0.68	0.71	0.60	0.59	0.68	0.65	0.56	0.82	0.42	0.63
60	0.63	0.63	1.30	0.46	0.47	0.72	0.71	0.59	0.26	0.47	0.45
61	0.68	0.64	0.55	0.62	0.77	0.54	0.64	0.70	0.33	0.41	0.52
62	0.58	0.79	0.41	0.54	0.82	0.47	0.60	0.47	0.19	0.36	0.35
63	0.70	0.87	0.49	0.55	0.67	0.53	0.68	0.70	0.30	0.33	0.50
64	0.79	0.82	0.44	0.61	0.79	1.07	0.74	0.69	0.48	0.57	0.60
65	0.63	0.70	0.48	0.61	0.83	1.25	0.67	0.69	0.29	0.52	0.52
66	0.68	0.65	0.39	0.62	0.66	0.70	0.62	0.62	0.26	0.64	0.49
67	0.64	0.75	0.87	0.42	0.42	0.91	0.68	0.62	0.48	0.36	0.53
68	0.74	0.70	1.25	0.59	0.55	0.82	0.79	0.76	0.52	0.37	0.62
69	0.68	0.64	0.82	0.74	0.61	0.74	0.70	0.81	0.35	0.46	0.59
70	0.71	0.90	0.97	0.72	0.41	1.26	0.80	0.61	0.61	0.46	0.59
71	0.80	0.72	0.68	0.52	0.70	0.80	0.73	0.71	0.34	0.49	0.55
72	0.80	0.74	0.80	0.49	0.45	0.56	0.72	0.80	0.26	0.40	0.55
73	0.69	0.83	0.42	0.95	0.66	1.02	0.72	0.68	0.56	0.31	0.58
74	0.88	0.73	0.37	0.47	0.43	0.71	0.69	0.46	0.82	0.64	0.62

75	0.78	1.05	1.07	0.82	0.45	1.07	0.88	0.63	0.76	0.58	0.67
76	0.73	0.92	0.62	0.77	0.69	0.65	0.75	0.70	0.87	0.54	0.74
77	0.53	0.88	0.72	0.54	0.53	0.77	0.65	0.62	0.67	0.78	0.66
78	0.61	0.90	0.87	0.57	0.75	0.69	0.72	0.78	0.66	0.64	0.72
79	0.79	0.94	0.69	0.65	0.63	0.56	0.77	0.69	0.71	0.60	0.68
80	0.86	0.68	0.36	0.66	0.85	1.45	0.76	0.83	0.85	1.16	0.89
Min	0.40	0.52	0.25	0.38	0.35	0.43	0.49	0.28	0.17	0.31	0.35
Median	0.69	0.78	0.68	0.60	0.67	0.79	0.72	0.67	0.52	0.48	0.60
Mean	0.70	0.80	0.71	0.62	0.74	0.81	0.73	0.65	0.57	0.53	0.60
Max	1.15	1.17	1.35	1.07	1.80	1.45	1.00	1.06	1.23	1.19	0.96
St. Dev.	0.15	0.15	0.28	0.13	0.29	0.22	0.11	0.15	0.25	0.18	0.12

Table 9: Regressions of Statewide Spatial Diversity Averages

Variables	**Model 1: All States and Old California Districts**	**Model 2: All States and New California Districts**
Intrinsic state heterogeneity	0.702 (0.0507)***	0.696 (0.050)***
Natural log of number of districts	-0.0345 (0.00618)***	-0.0351 (0.00611)***
Constant	0.198 (0.0316)***	0.203 (0.0313)***
Observations	50	50
Adjusted R-Squared	0.815	0.814

Entries for variables take form: coefficient (standard error).
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$