

RESEARCH NOTE

ZIP Codes as Geographic Bases of Representation

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ABSTRACT

We consider the desirability of ZIP codes as the basis for configuring congressional districts. There are several issues. First, it is likely that voters lack knowledge of ZIP code boundaries. Second, ZIP codes may not coincide with existing political subunit boundaries, such as cities or counties whose non-fragmentation is legally important for redistricting. Thus, using ZIP codes would add yet another layer of complexity to districting. Third, ZIP codes do not perfectly coincide with larger Census units, such as tracts, or even with smaller units such as Census block-groups. Moreover, while districts can be drawn using ZIP codes that seem better in many respects than existing maps, the same is at least as true for line drawing using existing census geography and maintaining city and county boundaries to the greatest extent feasible. Fourth, we find the empirical evidence offered by Curiel and Steelman (2018) that ZIP code splits are a major aspect of the ability of voters to identify their legislator and engage in political communications with them to be less than fully convincing, though we applaud their efforts at data gathering and the care with which they have sought to control for potential confounding factors. We further commend them for their emphasis on the need to put operational content into the abstract and multivocal concept of *community of interest*, a concept which still is undertheorized, especially in the legal context.

Redistricting is a key element of political representation. In addition to congressional districts, there are tens of thousands of legislative, county, township, and city districts that are redrawn every ten years after each decennial census,¹ with 4,841 state legislative districts in the lower chambers of the state legislatures alone.² In an innovative paper, Curiel and Steelman (2018), and in their follow-up to it (2020), these authors emphasize the importance of legislator-constituent linkages as a counterpoint to the notion of racial or ethnic membership or partisan voting patterns or existing political subunit boundaries, as the central basis for specifying geographically constructed units of representation, i.e., districts. But beyond their interesting discussion of principles of representation, Curiel and Steelman have what we take to be their main point a specific proposal: they wish to *make use of ZIP codes in creating congressional districts*.

Curiel and Steelman (2020) make several quite strong claims for ZIP codes. They assert, for example, that: “ZIP codes act as one of the primary means by which constituents identify their representatives, and representatives their constituents,” and that “Splitting ZIP codes between multiple districts impairs the ability for constituents and representatives to identify each other” (2020: 3).

We recognize that using ZIP codes does offer a neutral principle that allows line drawers to avoid making race the preponderant motive in redistricting,³ and it is one that is not political. Moreover, we recognize that other approaches, e.g., avoiding the fragmentation of existing political subunits, drawing districts that encompass geographically compact racial minorities, avoiding the drawing of districts that intentionally or unintentionally create partisan bias in electoral outcomes, are far from perfect; furthermore, we recognize that the criticism of ZIP code use in Grofman (2019), that ZIP code use does not stop *stealth gerrymandering*, applies to virtually all other kinds of constraints as well. We also agree with Curiel and Steelman (2020) that the criticism in Grofman (2019) that using ZIP codes for redistricting necessarily involves

¹ In addition, there are school districts of various sorts and a conger of special purpose districts that also need redrawing.

² We include Nebraska’s unicameral legislature.

³ Avoiding the use of race as a preponderant motive is identified by the U.S Supreme Court as constitutionally mandated in *Shaw v. Reno*, 509 U.S. 630 (1993), reaffirmed in *Alabama Legislative Black Caucus v. Alabama*, 135 S. Ct. 1257 (2015).

state-wide analyses was misguided; unnecessary splitting of ZIP codes can also be examined within any given district.⁴

And we certainly agree with the point emphasized by Curiel and Steelman (2020) that it is desirable that voters (as well as legislators) be able to identify the boundaries of the constituencies in which they find themselves.⁵ Indeed, this is a point with which one of us has long agreed. Grofman (1992), in his declaration in a pre-*Shaw v. Reno* case, *Pope v. Blue*, 809 F. Supp. 392 (W.D.N.C. 1992) that challenged North Carolina's congressional districting on political rather than racial grounds, proposed that the infamous 12th congressional district in North Carolina should be struck down as *non-cognizable*.⁶ This term he defined as applying to a district which was so peculiarly configured that voters would be unable to figure out its boundaries. More precisely, in later work (Grofman, 1993: 1261; quoted in Bowen, 2014) *cognizability* is defined as "the ability to characterize the district boundaries in a manner that can be readily communicated to ordinary citizens of the district in commonsense terms based on geographic referents."⁷ A clear operational test for *cognizability* has yet to be developed and unfortunately, in our view, the concept of *non-cognizability* never gained any legal

⁴ While it once appeared that the Supreme Court might accept a district specific standard for partisan gerrymandering while rejecting a state-wide standard, after *Rucho v. Common Cause*, 588 U.S. ____ (2019), there will simply be no federal remedy for partisan gerrymandering whether the allegation is about district-specific or about state-wide gerrymandering. However, racial gerrymandering cases and cases brought under the *Shaw v. Reno* 509 U.S. 630 (1993) racial preponderance test do require district-specific evidence. But, Curiel and Steedman's (2020: 6) assertion that Grofman (2019) offers a proportional representation test is flatly wrong. Since the rebuttal to this claim that the standard test for *partisan bias* is equivalent to proportional representation is already found in Grofman (2019), we will not bother to discuss the claim here. Suffice it to note that equating partisan bias with a test for proportionality is a common error, one that is shared by several Supreme Court Justices.

⁵ We are more skeptical about the stronger claim they make that it is helpful for voters to be able to identify the *geographic location* of other voters in the district with respect to which zip code the other voters are in. See discussion below.

⁶ That district was soon thereafter to be struck down in *Shaw* as unconstitutional on grounds of having been created via a racially preponderant motive.

⁷ One other subsequent use of the term *cognizability* in the redistricting context of which we are aware is in Stephanopoulos (2012a), but we believe that his use of the terminology was independently arrived at, though its meaning is essentially the same as in Grofman (1992). See later footnote for Stephanopoulos's use of the term. See also Grofman (1985).

traction in federal case law.⁸ But is not clear that ZIP codes provide the best solution for cognizability. There are several issues with respect to making ZIP codes the first resort, or even a central resort, in line drawing.

First, and most importantly, Curiel and Steelman (2020) make a few quite strong claims for ZIP codes. They assert, for example, that: “ZIP codes act as one of the primary means by which constituents identify their representatives, and representatives their constituents,” and that “Splitting ZIP codes between multiple districts impairs the ability for constituents and representatives to identify each other.” Using data in the Cooperative Congressional Election Study (CCES) to justify such claims, they find (2018: 329) that “when congressional districts split ZIP Codes, constituents are less likely to remember and contact their representative, and perceive greater alienation from their representative.”

But this data is not as compelling as it might first appear.

First, the notion that voters *need* ZIP codes to identify their representative, or vice versa, seems stretched. It is true that if you go to the official House of Representatives website <https://www.house.gov/representatives/find-your-representative> and seek to identify your Representative, or if you go to a U.S. Census website for this purpose, you will only be asked to provide a ZIP code.⁹ However, if the zip code entry gives a result you believe in error, then you are invited to click on a link to report the error and as part of that error message you need to include a full street address. Nonetheless, if you go online and type in “Find my congressman” or “Find my representative,” you can get to <https://www.commoncause.org/find-your-representative/addr/#>. At that website, when you type in your street address (with the name of the city and without a ZIP code needed) you will be given the names and websites of your national and state political representatives as well as information on how to contact them, bills they’ve introduced, committees they serve on, and political contributions they’ve received.

⁸ The trial court in *Pope v. Blue* dismissed plaintiff's partisan gerrymandering complaint for failure to make a credible allegation that, in the language of *Davis v. Bandemer*, 478 U.S. 109 (1986), the state's redistricting plan had caused them to be "shut out of the political process."

⁹ We believe that this design choice reflects the fact that ZIP code is usually an accurate identifier of congressional district in parts of the country where the population is not that dense.

That you can identify your representative via *ZIP code* does not mean that you can identify your fellow constituents. Boundaries of *ZIP* codes are not well known or easy to identify. Unless citizens know the boundaries of their own *ZIP* code, they could not know whether their *ZIP* code is wholly or only in part included in a congressional district. Speaking personally, until we started writing this essay, except for the *ZIP* code which is entirely the University of California, Irvine, neither of us had any idea what are the boundaries are of any other *ZIP* code in the city (Irvine) in which we live, including the *ZIP* code in which the home of one of us is located. Nor prior to researching this essay did we even know how many *ZIP* codes are included in the City of Irvine, or whether any of those *ZIP* codes extended outside the city.

Turning to the other side of the argument advanced by Curiel and Steelman, the importance of the use of *ZIP* codes by congress members taking advantage of their franking privilege to identify their constituents,¹⁰ there are two problems with the argument. On the one hand, the evidence presented by Curiel and Steelman (2018) themselves shows that, even where *ZIP* codes are split across districts, legislators can identify those contacting them who do not actually live in their district.¹¹ On the other hand, the use of snail mail for political communication is decreasing, especially for office holders in higher profile positions whose communication tools are more sophisticated. Increasingly, information is shared via social media and other on-line communication tools. Members of the House of Representatives all receive a website on the domain “house.gov” where they can directly receive mail. They also often have campaign websites where they raise money and communicate policy preferences.

Second, Curiel and Steelman imply (2020: 5) that *ZIP* codes are “maximize[ers of] the constituent-representative link.” But they do not directly test the importance of *ZIP* codes as against other features of a district such as the preservation of city boundaries.

¹⁰ Legislators do, indeed, differentiate between constituents and non-constituents, and they can use geo-coding tools (and voter registration lists) to do so.

¹¹ Curiel and Steelman (2018, pg. 335) note the ability of incumbents to separate bulk mail so that it only goes to their own constituents. They suggest that using *ZIP* codes to create districts would make it easier for challengers to identify potential constituents, and thus that using *ZIP* codes in this way would operate to level the playing field. We are skeptical that this effect would be large and the bulk mailers who would almost certainly be brought in to process direct mailings already possess the technology to identify the constituents of a district.

ZIP codes need not coincide with political subunit boundaries with which voters are more familiar.

In the process of writing this essay we learned that pieces of seventeen ZIP codes are contained in the City of Irvine, but the majority of voters in some split ZIP codes, such as 92630, which is predominantly in Lake Forest, CA, do not live in Irvine. By our best judgment, only two ZIP codes of the seventeen are wholly contained within the City of Irvine, CA (92604, 92617).¹² But the City of Irvine is wholly within California CD 45, and that, in our view, matters a lot more for the *cognizability* of that CD to the residents of Irvine than knowing ZIP code. Also, in more rural areas, ZIP codes may be attached to a city in which voters do not live, or even in another state. In San Juan County, Utah, for example, the postal addresses which some Navajo voters use are in Arizona.¹³

The present authors, despite having familiarity with redistricting, could not have identified the exact boundaries of their congressional district or even list all the cities found in whole or in part within it. But, even if we do not know which cities are in a CD, if we are told the answer, we can process that information far more readily than we can information about which ZIP codes are in each CD. While we do not know ZIP code boundaries, we do have a conception of the city boundaries near us. Such boundaries are shown on maps, both paper and electronic, and city names are highlighted on freeways and on some surface roads.¹⁴

But it is not just cities whose boundaries ZIP codes may spill over; ZIP codes also do not need to coincide with county boundaries. Mistakenly in our view, Curiel and Steelman (2018: 349) do not regard the failure of ZIP codes to conform to existing units of political geography as a problem. For example, they assert: “Preserving ZIP Codes is

¹² The unit of geography with which most Irvine residents are best familiar is a very small geographic unit, the homeowner’s association of which they are a member.

¹³ We learned this fact we were involved in litigation in that county. Similarly, if you lived in a small town like Cranberry, PA when it did not have a post office, you would have been forced to learn to spell Zelienville, PA; the most proximate town with a post office. Cranberry has since grown quite substantial and now has its own post office.

¹⁴ Another boundary that does seem to have a high level of knowledge among ordinary citizens, at least among parents, is the school catchment area, since that determines the quality of the school to which one’s children are going to be assigned.

superior in effect and practicality than the preservation of county lines. Counties frequently exceed the average size of congressional districts—like Cook County in Chicago with over two million residents.” But the size of Cook County is an advantage in some ways in that we can draw some congressional districts wholly within the county.

Moreover, why would we want to prioritize avoiding the fragmentation of ZIP codes over avoiding unnecessary fragmentation of cities and counties, especially since most states already have constitutional requirements to make use of existing political subunit boundaries such as cities and counties (National Conference of State Legislatures, 2019), and use of such boundaries has been written into most redistricting legislation, and is uniformly considered an attribute of good government redistricting? Curiel and Steelman (2020:6) assert: “To ignore the role ZIP codes play in facilitating the constituent-representative link is to leave one open to failure in court.” But no court, to our knowledge, has considered the legal implications of using ZIP codes for redistricting purposes. Adding a requirement for ZIP codes to be used in the construction of redistricting plans just adds a further layer of legal complexity given the failure of ZIP codes to fully coincide with the boundaries for cities or counties.

We see Curiel and Steelman as too quick to dismiss the representational values achieved by preserving to the greatest extent feasible existing formal political boundaries. To justify their view, Curiel and Steelman (2018: 333) cite Engstrom (2005) and Bowen (2014) in support of the claim that that preserving county boundaries or imposing compactness does not “affect the knowledge of constituents in regards to their representatives,” but in our view this assertion misstates the findings of both these authors. Below is a direct quote from Bowen (2014: 856):

Using two measures of geographical compactness and a new measure of respect for political subdivisions (referred to as coterminosity) created with a geographic information system (GIS), the connection between district boundaries and representation is tested. The results show strong evidence that the use of geographic districting principles can enhance dyadic representation, as more compact and more coterminous districts are associated with more positive evaluations of legislative responsiveness and greater citizen-representative communication.

Bowen (2014: 881, emphasis added) further notes that

his results mirror previous findings on respect for political subdivisions. For example, Niemi et al. (1986) find that community-district overlap, measured as the number of districts a county is split into, is associated with an 8-percentage point increase in incumbent name recall and recognition. Winburn and Wagner (2010) likewise find a 6-12 point increase in name recall of incumbent House members, depending on the exact measure of the dependent variable and the respondent's level of political knowledge. That my measure of respect for subdivisions results in remarkably similar estimates is evidence of the robustness of the underlying relationship. Districts drawn to match pre-existing political communities appear to foster increased knowledge about and communication with elected representatives.¹⁵

Bowen (2014: 867, internal citations omitted) also points out that “political units like counties and towns, but also, in some cases, wards or neighborhoods, can be thought of as natural communities of interest,” and goes on to say about cities that

residents of the same city share much in common—the same taxation levels, the same public problems, and the same municipal government. Even if they differ on partisan preferences or political ideology, there are some interests that residents share simply because of their common government and place of residence. District boundaries that keep these political units together should make it easier for voters to hold their representatives accountable for representing those shared interests and may result in a districting system more reflective of the diversity of interests within a state.

On the other hand, most of the results in Engstrom (2005) are not actually directly relevant to any claims in Curiel and Steelman (2018, 2020) since the key dependent variable in that book chapter is voter turnout, not knowledge. However, there is one hypothesis in the Engstrom chapter that is a clear exception:

¹⁵ The Bowen (2014) study did not study name recall.

“Hypothesis 4. Districts with a high degree of conformity to media markets boundaries will be positively associated with citizen ability to recall candidate’s names.”

Engstrom (2005: Table 4.3 (p. 79)) shows that district media market conformity is, as posited by this hypothesis, “positively and significantly related to citizens ability to recall candidate names.” We will have more to say about media markets later below.

Third, there is not a perfect correspondence between ZIP codes and units of census geography.¹⁶ For the lowest unit of census geography, the block, the problems are not at all a major one and can be dealt with by use of ZCTAs as ZIP code equivalents.¹⁷ But ZCTAs do not perfectly coincide with larger Census units such as tracts. Even Census block groups, which are the second lowest form of Census aggregation, may overlap ZCTAs (see Figure 1). This fact causes some practical problems in efficiently drawing redistricting plans under strong one person, one vote constraints.¹⁸

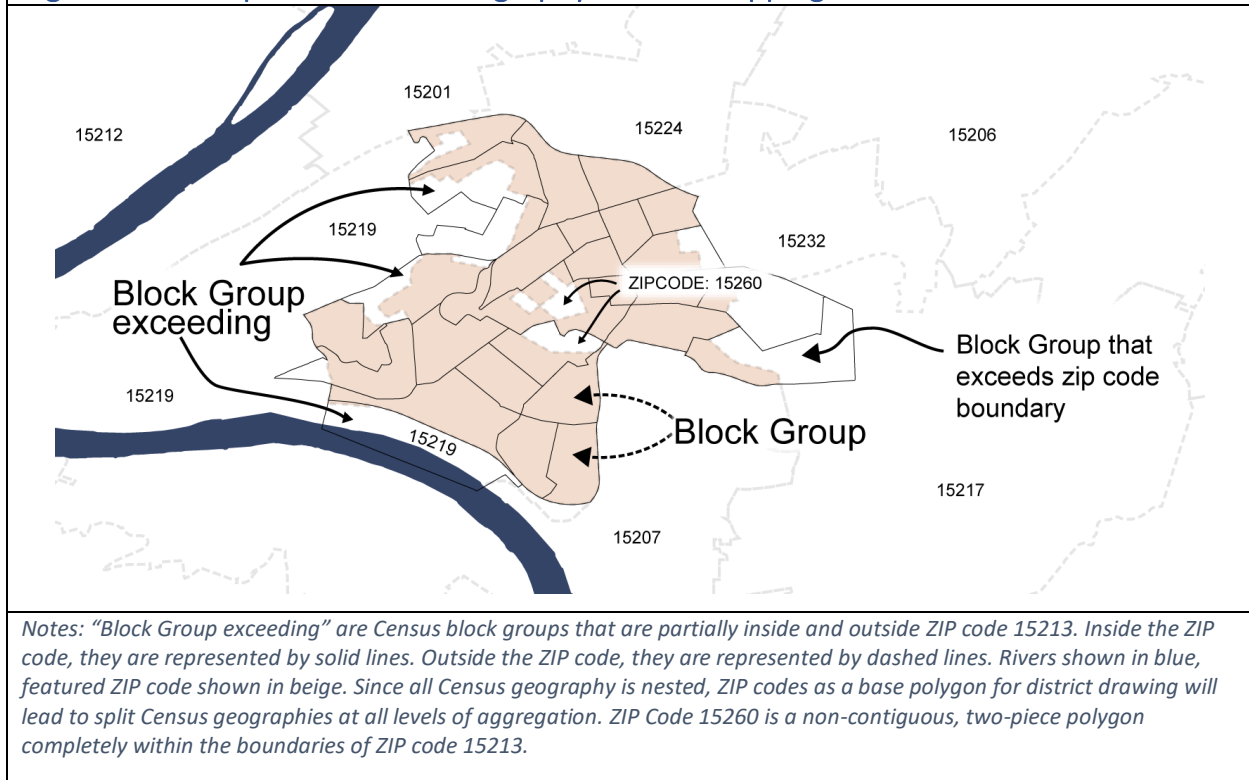
<<**Figure 1 about here**>>

¹⁶ For additional reference on the geographic limitations in using ZIP codes as building blocks for territories, see Grubestic (2008).

¹⁷ ZIP codes, created by the U.S. Postal Service, are not created with Census data and may split Census blocks (of which there are 11,078,298). ZCTA’s, however, created by the Census Bureau to conform as closely as possible to zip code boundaries, are constructed from Census blocks. But when census blocks and ZIP code do not perfectly coincide, in order to mesh with census geography, some blocks in the ZCTA are assigned to the ZIP code which appears to contain the majority of the block’s population.

¹⁸ There are other technical issues which we regard as relatively minor. First, Figure 1 also shows that ZIP codes need not be especially compact (see ZIP code 15219), but in fairness the same is true for some census tracts and even some census blocks. Second, ZIP codes are occasionally non-contiguous (see ZIP code 15260 in Figure 1) though the same is true for some cities because of annexation history (e.g., graveyards or waste dumps outside the main city limits). But, as Curiel and Steelman (2018) show, combining adjacent zip codes can alleviate non-contiguity issues. Third, the USPS periodically makes changes to ZIP code boundaries in order to more efficiently deliver mail. But changes in boundaries also happen with units of census geography. Also, we would want to distinguish between ZIP code splits that were forced by population concerns or the need to maintain city or country integrity, and those that were not.

Figure 1 – Example of Census Geography Not Overlapping with ZIP Codes



Although, we do recognize that, within cities or counties, ZIP codes might be used as a supplementary category, why is that preferable to using other non-political units, such as census tracts, as the basic building blocks of plans within cities or counties? Though Curiel and Steelman (2018) demonstrate for North Carolina that a redistricting plan can be drawn using ZIP codes that seems better in many respects than the existing legislatively drawn map, the same is at least as true for “good government” line drawing using existing census geography while avoiding unnecessary fragmentation of cities and counties and with attention to voting rights and constitutional issues.¹⁹

Fourth, there are issues with the experimental design. Curiel and Steelman (2018, pg. 349) find that “when congressional districts split ZIP Codes, constituents are less likely to remember and contact their representative, and perceive greater alienation from their representative,” but the research design they use is not ideal. Their design compares congressional districts in terms of how many/what proportion split ZIP codes they

¹⁹ See e.g., Grofman (2015).

contain. But why should that matter for all the voters in a CD? Under the implicit story in Curiel and Steelman, shouldn't the voters living in a ZIP code that is wholly within the CD be more able to identify their representative than the voters in the CD who live in a split ZIP code? If so, shouldn't we be taking ZIP codes, not CDs, as our unit of analysis and make that comparison directly? Curiel and Steelman (2020, pg. 4) in fact, say: "the individuals who have greater difficulty in recognizing their member of Congress tend to arise from these ZIP codes that are more heavily split, all else being equal." But that does not seem to be the hypothesis they tested.

Moreover, as we reflect further about possible selection bias effects, it would seem to be better not to pool data and instead to look within individual CDs and compare the voters in that CD who live in a ZIP code wholly within the CD with the voters in that same CD who live in a ZIP code that is split between that CD and another CD (or even CDs). However, even that may not be a good enough control. The ZIP codes that are split may not be a random sample of all ZIP codes, even ZIP codes within the CD. Almost certainly the ZIP codes that are split are ZIP codes toward the boundaries of the CD and, if there is gerrymandering, those boundaries may be where the most overt gerrymandering is going on, so the parts of the district with split CDs might be the parts of the district that are most ill-compact. In this case you would get an apparent correlation between split ZIP codes and incumbent recognition, but it really would not be driven by the degree to which voters lived or did not live in a split ZIP code.

There are other complications in terms of possible confounding factors. For example, if you live in a state with a single CD then (a) you probably are more likely to know the name of your representative than someone who lives in a state with many representatives, because the state media will only have one representative to talk about and the representative from your CD will not be lost sight of in the coverage of other members of Congress, who are perhaps more senior, in a leadership position, or have a greater media presence; and (b) if your state has only a single member of congress then you are living in a state where all the ZIP codes are being kept whole with a congressional district. This suggests that paying attention to how many congressmembers are elected from a state is a potentially important control factor. While we do not know this to be a fact, the proportion of split ZIP codes may be correlated with the population of the state, and thus with the likely recognizability of members of Congress, in ways that are not fully

compensated for by the various control factors introduced in the Curiel and Steelman regression model.

A closely related confound is media market. Beyond longevity in office, powerful chair position, and same race and same party as the voter, if we had to guess what other factor would best account for name recognition we would guess that having local newspapers and radio and tv stations (and their internet incarnations) cover only one or at most a few congressional districts would enhance name recognition a lot. Indeed, as noted earlier, Engstrom (2005) provides evidence that this indeed the case. See also Schaffner and Sellers (2003) who observe that media markets often include whole counties. In contrast, Curiel and Steelman (2020: 8, fn. 13) downplay the importance of media markets for redistricting purposes (and as predictors of name recognition) because they are often larger than a single CD. In our view that can be exactly the point of making use of them. Indeed, those larger than a CD would need be split, but at least one (or perhaps multiple) CD could be wholly contained within a media market exceeding the size of an ideal CD.²⁰

Communities of Interests

But, while we have expressed our skepticism about ZIP code use in the fashion that Curiel and Steelman propose, we do wish to endorse their view that it is important to investigate how to provide content to the concept of *community of interest* as it manifests itself geographically. We believe it fair to say that the concept of *community of interest* remains remarkably murky, both for legislatures drawing lines and for courts who must make legal decisions about the meaning of statutory or constitutional references to the concept.²¹

²⁰ Even when media markets extend beyond a single state there can still be benefits to political communication to have an entire congressional district included within the media market (Philadelphia's media market includes parts of New Jersey; some academic papers have used this as a quasi-natural experiment (Meyer 1995; see also Card and Krueger 2000).)

²¹ Consider, for example, the language in *In re Legislative Districting of State*, 370 Md. at 323, 805 A.2d at 298 (2002): "[I]t is not for the Court to define what a community of interest is and where its boundaries are, and it is not for the Court to determine which regions deserve special consideration and which do not"

There are however, two useful distinctions we would want to emphasize.

The first distinction is between very general notions of community of interest²² and definitions that are specifically tied to communities that are territorially defined. Stephanopoulos (2012a) uses the term *territorial community* instead of the more common *community of interest*, explaining: “a community of interest does not have to be spatially bounded, meaning that it coexists uneasily with the American system of geographic districting. In addition, a community of interest can be deemed to arise on the basis of any common concern, making the term notably imprecise and malleable.”²³

The second distinction is among territorially defined communities. That distinction is between communities whose inclusion or exclusion may directly raise legal issues, e.g., about racial vote dilution, or about commonality of political interests, and other types of communities where the implications of commonality are of less clear legal or political relevance.²⁴ With respect to this second distinction, we would particularly

²² A quote from Ferdinand Tonnies is apposite here: “Community by blood, indicating primal unity of existence, develops more specifically into community of place, which is expressed first of all as living in close proximity to one another. This in turn becomes community of spirit, working together for the same end and purpose. Community of place is what holds life together on a physical level, just as community of spirit is the binding link on the level of conscious thought.” (quoted in Wong, 2010).

²³ We find Stephanopoulos the clearest thinker of whom we are aware when it comes to making operational notions of geographically linked community. Stephanopoulos (2012a, see also Stephanopoulos 2012b) offers the following definition: “[A] territorial community is a (1) geographically defined group of people who (2) share similar social, cultural, and economic interests and (3) believe they are part of the same coherent entity. The first element, geographic demarcation, is necessary because of the American commitment to geographic districting. While non-geographic communities certainly exist, they cannot easily be captured by districts that are drawn spatially. The second element, shared interests, is mostly objective in character and gives rise to groups of people who are affected in similar ways by (and usually have similar positions on) the gamut of governmental actions. The common concerns that are most relevant here are those that bear on some matter of actual or potential governmental policy. Lastly, the third element, a feeling of communal affiliation, is subjective in nature. It ensures that members of a community actually understand themselves to be part of the same cognizable unit.” But Stephanopoulos (2012a) also clearly acknowledges the “fuzziness” of his concept of *territorial community*.

²⁴ Stephanopoulos (2012a) argues that courts need only invalidate a district if “one of three disruptions to a community of interest is found: (1) *fusion*, (2) *fragmentation*, and (3) *subversion*.” *Fusion* is where groups from divergent communities are put together where claims of commonality may be unjustified. He notes that fusion was the subject of *LULAC v. Perry*, 548 U.S. 339 (2006). *Fragmentation* is when groups are split among multiple districts in a fashion that dilutes their voting power. In the redistricting literature this is often referred to under the rubric of *cracking*. There can be dispute about exactly which groups have legal protections against fragmentation, as shown in Chief Justice Burger’s dissent in *United Jewish Organizations of Williamsburgh, Inc. v. Carey* 430 U.S. 144 (1977). *Subversion* is when communities are selectively integrated into districts in a way intended to achieve racial or partisan ends. Subversion issues arose in *Gomillion v. Lightfoot*, 364 U.S. 339 (1960), a case involving

call attention to the work of Koetzle (1998). He identifies five features of a district population that are specifically relevant to our ability to predict the district's partisan proclivities. We would also call attention to the work of Brace, Grofman, and Handley (1987), Grofman, Handley and Lublin (2001); Gimpel, Harbridge and Yong (2020), and Lublin et al (2020) about the link between racial representation and partisan representation.

Conclusion

We have argued that the research design and the corresponding regression analyses in Curiel and Steelman (2018, 2020), though reflecting great sophistication in data gathering and careful use of control variables, is not really a direct test of the importance of split ZIP codes for voter cognitions and legislator name recognition, and there may be factors not controlled for that might explain their regression results, such as splitting cities or counties, or fragmenting racial groups. But we also do not want to be misinterpreted as having argued for the view that ZIP codes are fatally flawed for use in redistricting. Rather, we take the view that Curiel and Steelman have not provided compelling evidence in support of many of their key arguments in favor of ZIP code use. In particular, they do not present direct evidence on their implicit claim that those who share a ZIP code share politically relevant interests that make it more desirable to aggregate the inhabitants of a zip code within a single district than to use units such as census tracts, which nest within counties and often cities. But, absent empirical investigations well beyond the scope of the present note, we cannot rule out the possibility that such evidence could be educed.

The concept of *community of interest* will be of even greater relevance in the 2020 round of districting than in the past. Recent successful initiatives seeking to reform/improve redistricting criteria or mechanisms have included language about

racially selective annexation. In the redistricting literature the problem arising from one kind of selection bias is often referred to under the rubric of *packing*.

protecting communities of interest.²⁵ Language referencing that term is now found in 26 states for congressional, legislative, or both types of maps (NCSL 2019).²⁶ The *Princeton Gerrymandering Project* has introduced a tool, *Representable*, to facilitate the inclusion of individual and group cognitive perceptions of communities into the redistricting process.²⁷ A number of recent academic papers have addressed the issue of how to integrate community of interest concerns into map-making and/or of how better to understand constituent-representative linkages that have a geographic component (Makse 2012; MacDonald and Cain 2013; Spielman and Singleton 2015; Phillips and Montello 2017; Rossiter et al 2019; Gimpel and Harbridge-Yong 2020; Magpantay 2020). We strongly encourage Curiel and Steelman (and others) to pursue further empirical investigations of ZIP codes and other ways to identify communities of interest

²⁵ For example, a recent reform (effective 3/28/2020) in Utah specifies a set of redistricting criteria that includes protecting communities of interest (UT Code Annotated § 20A-20-302(5)(a)).

²⁶ For comparison, in 1985, language about preserving communities of interest was found explicitly in only eight state constitutions when describing the requirements for legislative or congressional line drawing in the state (Grofman, 1985, Table 3, p. 177), with implicit references to the concept in a few others.

²⁷ See representable.org

REFERENCES

- Bowen, Daniel C. 2014. "Boundaries, Redistricting Criteria, and Representation in the U.S. House of Representatives." *American Politics Research* 42(5): 856–895.
<http://journals.sagepub.com/doi/10.1177/1532673X13519127>.
- Brace, Kimball, Bernard Grofman, and Lisa Handley. 1987. "Does Redistricting Aimed to Help Blacks Necessarily Help Republicans?" *The Journal of Politics* 49(1): 169–185.
<https://www.journals.uchicago.edu/doi/10.2307/2131139> (Accessed February 18, 2020).
- Card, David, and Alan B Krueger. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply." *American Economic Review* 90(5): 1397–1420. <https://www.aeaweb.org/articles?id=10.1257/aer.90.5.1397>.
- Curiel, John A., and Tyler Steelman. 2020. "A Response to 'Tests for Unconstitutional Partisan Gerrymandering in a Post- Gill World' in a Post- Rucho World." *Election Law Journal: Rules, Politics, and Policy* 19(1): 101–109. <https://www.liebertpub.com/doi/10.1089/elj.2019.0612>.
- Curiel, John A., and Tyler Steelman. 2018. "Redistricting Out Representation: Democratic Harms in Splitting Zip Codes." *Election Law Journal: Rules, Politics, and Policy* 17(4): 328–353.
www.liebertpub.com (Accessed December 28, 2018).
- Galderisi, Peter F. 2005. *Redistricting in the new millennium / edited by Peter F. Galderisi*. Lexington Books.
<http://libproxy.mit.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat00916a&AN=mit.001386028&site=eds-live&scope=cite> (Accessed June 14, 2020).
- Gimpel, James G., and Laurel Harbridge-Yong. 2020. "Conflicting Goals of Redistricting: Do Districts That Maximize Competition Reckon with Communities of Interest?" *Election Law Journal: Rules, Politics, and Policy*: elj.2019.0576. www.liebertpub.com (Accessed June 30, 2020).
- Grofman, Bernard. 2015. *Report of the Special Master, Personhuballah et al. v. Alcorn et al.* 239 F. Supp. 3d 929 (E.D. Va. 2017).
- Grofman, Bernard. 1992. Declaration in *Pope et al. v. Blue et al.*, U.S. District Court, Western District, Charlotte, North Carolina Division, March 5. See also 809 F. Supp. 392 (W.D.N.C. 1992).
- Grofman, Bernard. 1992. "Would Vince Lombardi Have Been Right If He Had Said: When it Comes to Redistricting, Race Isn't Everything, It's the Only Thing." *Cardozo Law Review* 14: 1237–1276.
- Grofman, Bernard. 2019. "Tests for Unconstitutional Partisan Gerrymandering in a Post-Gill World." *Election Law Journal* 18(2): 93–115. www.liebertpub.com (Accessed June 11, 2019).
- Grofman, Bernard. 1985. "Criteria for Districting: A Social Science Perspective." *UCLA Law Review* 33: 77–184.
- Grofman, Bernard, Lisa Handley, and David Lublin. 2001. "Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence." *North Carolina Law Review* 79(5): 1383–

1430. <http://scholarship.law.unc.edu/nclrhttp://scholarship.law.unc.edu/nclr/vol79/iss5/12> (Accessed June 14, 2019).
- Grubestic, Tony H. 2008. "Zip codes and spatial analysis: Problems and prospects." *Socio-Economic Planning Sciences* 42(2): 129–149. <https://linkinghub.elsevier.com/retrieve/pii/S0038012106000516>.
- Koetzle, William. 1998. "The Impact of Constituency Diversity upon the Competitiveness of U. S. House Elections, 1962-96." *Legislative Studies Quarterly* 23(4): 561. <https://www.jstor.org/stable/440240> (Accessed May 20, 2020).
- Lublin, David, Lisa Handley, Thomas L Brunell, and Bernard Grofman. 2020. "Minority Success in Non-Majority Minority Districts: Finding the 'Sweet Spot.'" *The Journal of Race, Ethnicity, and Politics* 5(2): 275–298. <https://doi.org/10.1017/rep.2019.24> (Accessed June 14, 2020).
- Mac Donald, Karin, and Bruce E. Cain. 2013. "Community of Interest Methodology and Public Testimony." *UC Irvine Law Review* 3. <https://heinonline.org/HOL/Page?handle=hein.journals/ucirvire3&id=618&div=29&collection=journals> (Accessed June 15, 2020).
- Magpantay, Glenn D. 25 *Barry Law Review A Shield Becomes a Sword: Defining and Deploying a A Shield Becomes a Sword: Defining and Deploying a Constitutional Theory for Communities of Interest.* <https://lawpublications.barry.edu/barryrev/vol25/iss1/1> (Accessed June 15, 2020).
- Makse, Todd. 2012. "Defining Communities of Interest in Redistricting Through Initiative Voting." *Election Law Journal: Rules, Politics, and Policy* 11(4): 503–517. <http://www.liebertpub.com/doi/10.1089/elj.2011.0144> (Accessed June 15, 2020).
- Meyer, Bruce D. 1995. "Natural and Quasi-Experiments in Economics." *Journal of Business & Economic Statistics* 13(2): 151–161. <http://www.jstor.org/stable/1392369>.
- NCSL. 2019. *Redistricting Law 2020*. Legislatures, National Conference of State.
- Pildes, Richard H., and Richard G. Niemi. 1993. "Expressive Harms , ' Bizarre Districts ,' and Voting Rights : Evaluating Election-District Appearances after Shaw v . Reno." *Michigan Law Review* 92(3): 483–587.
- Schaffner, Brian F., And Patrick J. Sellers. 2003. "The Structural Determinants of Local Congressional News Coverage." *Political Communication* 20(1): 41–57. <https://www.tandfonline.com/action/journalInformation?journalCode=upcp20> (Accessed June 14, 2020).
- Stephanopoulos, Nicholas O. 2012. "Spatial Diversity." *Harvard Law Review* 125: 1905–1981. <http://www.nationaljournal.com/almanac/area/pa/06> (Accessed December 17, 2019).
- Stephanopoulos, Nicholas O. 2012. "Redistricting and the territorial community." *University of Pennsylvania Law Review* 160(5): 1379–1477.

Wong, Cara J. 2010. Boundaries of Obligation in American Politics: Geographic, National, and Racial Communities *Boundaries of Obligation in American Politics*. Cambridge: Cambridge University Press. <http://ebooks.cambridge.org/ref/id/CBO9780511802874> (Accessed May 23, 2020).

CASES CITED

Gomillion v. Lightfoot, 364 U.S. 339 (1960)

United Jewish Organizations of Williamsburgh, Inc. v. Carey 430 U.S. 144 (1977)

Davis v. Bandemer, 478 U.S. 109 (1986)

Pope v. Blue, 809 F. Supp. 392 (W.D.N.C. 1992)

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

In re Legislative Districting of State, 370 Md. at 323, 805 A.2d at 298 (2002)

LULAC v. Perry, 548 U.S. 339 (2006)

Alabama Legislative Black Caucus v. Alabama, 135 S. Ct. 1257 (2015)

Personhuballah et al. v. Alcorn et al. 239 F. Supp. 3d 929 (E.D. Va. 2017)

Rucho v. Common Cause, 588 U.S. ____ (2019)