Cutting through the Thicket:
Redistricting Simulations and the Detection of Partisan Gerrymanders

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Abstract: Social scientists have made progress in providing the courts with useful measures of partisan asymmetry in the transformation of votes to seats, but have thus far left a larger question unanswered: how can partisan gerrymandering be distinguished from a state legislature's acceptable efforts to apply traditional districting criteria, keep communities of interest together, and facilitate the representation of minorities? This article demonstrates how a straightforward redistricting algorithm can be used to generate a benchmark against which to contrast a plan that has been called into constitutional question, thus laying bare any partisan advantage that cannot be attributed to legitimate legislative objectives. We use the controversial 2012 Florida Congressional map to show how our approach can be used to demonstrate an unconstitutional gerrymander.

I. Introduction

Most of the justices of the United States Supreme Court have joined in opinions expressing some level of discomfort with the practice of partisan gerrymandering, and several have been very clear about their willingness to strike down partisan gerrymanders in

Pennsylvania, Texas, and Georgia.[1] However, constitutional challenges to partisan gerrymandering have failed repeatedly in recent years because pivotal justices have been unsatisfied with the standards for the identification of unconstitutional partisan gerrymanders laid out in *Davis v. Bandemer* 1986, as well as the alternatives laid out by the plaintiffs in *Vieth et al. v. Jubelirer* 2004 and more recently in *LULAC et al. v. Perry* 2006.

For Justice Kennedy in his *Vieth* concurrence, there are two problems. First is the lack of a “substantive definition of fairness in districting… Second is the absence of rules to limit and confine judicial intervention.” (p.1) Writing for the *Vieth* plurality, Justice Scalia argues that these problems are fatal, and no workable definition or standard for fairness can be achieved. The “thicket” described by Justice Frankfurter[2] is simply too thick for the courts (Schuck 1987). With the *LULAC* decision, however, a majority of justices including Stevens, Breyer, Kennedy, Souter, and Ginsburg have expressed far greater optimism that progress can still be made, and they have invited further efforts.

In order to cut through the thicket, judges and lawyers must use the tools that have been sharpened in recent years by social scientists. First of all, Gary King and collaborators (King and Browning 1987, Gelman and King 1994, King et al. 2006, Grofman and King 2007) have developed an approach to the measurement of partisan bias in the American two-party system, and a majority of justices has expressed some level of optimism about the potential of this or some related analysis to quantify harm to the representational rights associated with a redistricting plan (Grofman and King 2007, Stephanopoulos and McGhee 2015).

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[1] *Vieth et al. v. Jubelirer* 2004, *LULAC et al. v. Perry* 2006, *Cox v. Larios et al.* 2006.

[2] *Colgrove v. Green,* 328 U.S. 549, 556 (1946).

However, as Justice Kennedy and several of his colleagues have pointed out, "asymmetry alone is not a reliable measure of unconstitutional partisanship."[3] When attempting to assess whether a redistricting plan burdens the constitutional rights of a political party or its voters via either the First or Fourteenth Amendment, it is important to know whether the plan would produce substantially different seat shares for the two parties with an identical vote share. Yet such partisan asymmetry in the transformation of votes to seats could happen for several reasons that cannot be traced to partisan manipulation, including the application of traditional redistricting criteria, the protection of communities of interest through preservation of county and municipal boundaries, or the protections of minority voting rights associated with the Voting Rights Act.[4]

Perhaps the most basic problem with exclusive reliance on the symmetry standard was raised by Justice Scalia in the plurality opinion of *Vieth*, and has also been noted in classic studies of the United States and other former British colonies using single-member districts: Quite substantial asymmetries in the transformation of votes to seats can emerge even in the presence of non-partisan commissions purely because of the geography of the parties' supporters. Moreover, asymmetries in the transformation of votes to seats will often emerge as byproducts of attempts to carve out districts in which minority groups can elect candidates of choice, and from efforts to avoid breaking up politically homogeneous neighborhoods.

These are perhaps the thorniest remaining sections of the thicket that must be cleared in order to challenge a partisan gerrymander in federal courts. This article develops a technique for cutting through them. We respond to Justice Kennedy's concerns, and most of those expressed by the *Vieth* plurality, by implementing a technique called for by Judge Easterbrook of the 7th

[3] *LULAC,* 548 U.S. at 420 (opinion of Kennedy J.).

[4] See *Vieth* 541 U.S. at 15 (opinion of Scalia, J.).

Circuit Court of Appeals in *Gonzalez et al. v. City of Aurora* 2008. We use a transparent, straightforward, and replicable computer algorithm to simulate a large number of valid districting plans without regard for partisanship, applying only the traditional redistricting criteria that have been emphasized in virtually all recent court decisions including *LULAC*: compactness, contiguity, and population equality. The goal of this exercise is to have an objective baseline against which to contrast a redistricting plan that has been called into constitutional question.

We present simple procedures that enable us to make sure that this baseline is identical or superior to the plan in question on all relevant parameters such as population equality, contiguity, compactness, respect for county and municipal boundaries, and respect for the requirements of the Voting Rights Act.

We contrast the anticipated seat shares for the major parties in each of the simulated plans and in the plan promulgated by a state. If the partisanship of a proposed plan lies in the extreme tail of the distribution of simulated plans or outside the distribution altogether, courts can make relatively strong inferences about the plan's partisan effect and intent. That is, they can heavily discount the possibility that an asymmetry in the transformation of votes to seats can be explained away by natural geography, or by the state's "compelling interest" in protecting minorities or keeping cohesive political jurisdictions together.

Our approach makes the crucial distinction between intentional and unintentional asymmetries in the transformation of votes to seats, and lays bare any unconstitutional efforts of partisan mapmakers to undermine the fair representation of their adversary. Thus it circumvents thorny questions about "sole" or "predominant" intent that have stood in the way of recent constitutional challenges including *LULAC*.

For those who believe fairness requires symmetry or even proportionality, our proposed standard will seem to give state legislatures too much deference. Indeed, we take an avowedly realistic approach that responds not to notions of fairness that are uncontroversial in the classroom, but to the constitutional arguments that have prevented past standards from achieving success in the courtroom. Indeed, our approach could potentially allow a relatively unfair plan to pass constitutional muster if one party had an especially inefficient geographic support distribution.

However, we demonstrate that our standard has teeth. We work through a detailed analysis of the notorious Congressional districting plan in Florida that was recently found to be in violation of the state's Constitution on grounds of partisan gerrymandering after it was revealed that partisan operatives influenced the plan in violation of Florida's "fair districts" amendments.[5] In this paper, we show that the enacted plan produced more Republican seats than could have been anticipated if the Florida Legislature was attempting to govern impartially. The outcome cannot be explained by the residential geography of voters, the requirements of the Voting Rights Act, or by the legislature's desire to draw compact districts or respect county or municipal boundaries.

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[5] *Romo v. Detzner and Bondi*, Circuit Court of the Second Judicial Circuit in and for Leon County, Florida, Case No. 2012-CA-490 (2014).