Redistricting & the Quantitative Anatomy of a Section 2 Voting Rights Case

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Fundamentals

• Decennial Census – counting every person
• Reapportionment – distributing the 435 seats in the US House of Representatives
• Redistricting – dividing populations into districts
Origins of Redistricting Criteria

• Federal requirements
• State adopted ‘traditional redistricting principles’
• The Voting Rights Act of 1965 and race
• Local groups
• The role of partisanship
U.S. Constitution

• U.S. Congressional districts, *Baker v. Carr* (1962), and the Apportionment Clause in Article 1, Section 2

• State legislative districts, *Reynolds v. Sims* (1964), and the Equal Protection Clause of the 14th Amendment

• A nuanced difference
  – *Wesberry v. Sanders* (1964) – Congressional district populations must be as equal as is ‘practicable’
  – *Reynolds v. Sims* (1964) – State legislature district populations must be ‘substantially equal’
Equal Population

• ‘Ideal district population’ = total population / # of districts

• Deviations – relative overall mathematical range

• Ideal population = 714
  – Largest district: 728 people, a + 2% deviation from the ideal
  – Smallest district: 700 people, a -2% deviation from the ideal
  – Overall range of 4%

<table>
<thead>
<tr>
<th>Population Deviation Examples</th>
<th>Total Population</th>
<th># Districts</th>
<th>Ideal District Population</th>
<th>Relative Overall Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4%</td>
<td>10%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Small County</td>
<td>5,000</td>
<td>7</td>
<td>714</td>
<td>29</td>
</tr>
<tr>
<td>Large State</td>
<td>25,000,000</td>
<td>7</td>
<td>3,571,429</td>
<td>142,857</td>
</tr>
</tbody>
</table>
Equal Population Continued

<table>
<thead>
<tr>
<th>Current State Deviations</th>
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<tbody>
<tr>
<td>4%</td>
</tr>
<tr>
<td>House</td>
</tr>
<tr>
<td>Senate</td>
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</table>

• Local districts

• Alternatives to total population
  – State alternatives
    • California, Delaware, Maryland, and New York exclude non-resident prisoners
    • Kansas excludes non-resident students
    • Washington excludes nonresident military
    • Nebraska excludes aliens and Maine excludes non-naturalized citizens
    • Hawaii only uses permanent citizens
Traditional Redistricting Principles

• Compactness
• Contiguity
• Preservation of Political Subdivisions
• Preservation of Communities of Interest
• Preservation of District Cores
• Protection of Incumbents
• Other Rules
Compactness

- Geographic compactness
- Few jurisdictions define compactness
Contiguity map

- Districts can’t be in geographically separate pieces
- Relatively easy and non-controversial

Data Citation: National Conference of State Legislatures, accessed in June 2017, http://www.ncsl.org/research/redistricting/redistricting-
Preservation of political boundaries
• Judicially recognized in Shaw v. Reno (1993)
• Political boundaries, e.g. counties, cities, wards
• Not always clear cut
• Splitting jurisdictions
Preservation of Communities of Interest

- • Groups with similar geography, social interactions, trade, interests, or political ties
  - • Non-racial communities of interest
- • A subjective concept

Legislative Preservation of Communities of Interest

Congressional Preservation of Communities of Interest

Data Citation: National Conference of State Legislatures, accessed in June 2017. http://www.ncsl.org/research/redistricting/redistricting-
Preservation of District Cores

• Judicially recognized in Abrams v. Johnson (1997)

• Preserving prior district cores
• Judicially recognized in Abrams v. Johnson (1997)

• Exactly what it sounds like

• Only principle that is prohibited in some areas
Other rules

• Sub-county rules
  – City Councils, Advisory Boards, County Commissions, Citizen Groups
  – Must be pursuant to state and federal laws
  – Don’t carry same force of law
Race & Ethnicity

• History

• Voting Rights Act - Intent and Results

• The ‘Massive Resistance’ - Frank Parker’s Black Votes Count

The Clarion-Ledger in Jackson, MS urged the “custodians of Mississippi’s ‘white supremacy’ machinery” to “take a serious, studied look” at the racial composition of the state’s congressional districts “in view of the NAACP’s vigorous drive for Negro voting rights.”

In 1962, the same paper noted that although there was “no sizable Negro bloc vote in Mississippi”, “the Legislature can be expected to re-district the state so as to split there.”
Map 2.1. Land Areas of Mississippi. The predominantly black Delta region is in the northwest corner of the state.
Map 2.2. Mississippi's Congressional Districts in 1956. From 1882 to 1956, the Delta area was preserved intact in a single district (in 1956, the Third Congressional District).

Map 2.3. Congressional Districts Adopted by the State Legislature in 1962. After the 1960 census, as a result of the reapportionment of congressional seats, Mississippi lost a seat in the U.S. House of Representatives. The Second and Third Congressional Districts were simply combined to form a new Second District, which included the Delta area and was almost 60 percent black in population.
Map 2.4. First Congressional Redistricting Plan Adopted by the State House of Representatives in 1966. The House-passed plan would have divided the Delta among four of the state's five congressional districts, leaving all five districts majority-white in population.

Map 2.5. First Congressional Redistricting Plan Adopted by the State Senate in 1966. The Senate-passed plan would have divided the Delta area among three of the state's five districts, leaving one district with a slight black population majority.
Map 2.6. "Compromise" Congressional Redistricting Plan Adopted by Both Houses of the State Legislature in 1966. The plan divided the Delta area among three of the state's five districts, depriving blacks of a voting majority in any of the districts.
Establishing Results & Intent

  - First application of VRA 1982 Amendment
  - “...the ability of... cohesive groups of black voters to participate equally in the political process and to elect candidates of their choice” was impaired
  - Established a legal framework for assessing claims called the Gingles Preconditions
Gingles Preconditions in Legalese

• “First, the minority group must be able to demonstrate that it is sufficiently large and geographically compact to constitute a majority in a single-member district.”

• “Second, the minority group must be able to show that it is politically cohesive.”

• “Third, the minority must be able to demonstrate that the white majority votes sufficiently as a bloc to enable it – in the absence of special circumstances, such as the minority running unopposed – usually to defeat the minority’s preferred candidate.”
Gingles 1

• Is the racial or language minority ‘sufficiently numerous’ and ‘compact’ enough to form a ‘majority-minority’, single-member district?
  – ‘sufficiently numerous’
  – ‘compact’
  – ‘majority-minority’ district
    • 50% + 1 VAP from *Bartlett v. Strickland* (2009)
  – ‘minority’
Data Requirements

• Decennial Census geography and demographics
  – Census block level data and geography – building blocks for map-makers

• Data for compliance on other principles
Gingles 2 & 3

• Racially Polarized Voting (RPV) exists when racial/ethnic groups vote as distinct groups with distinct candidate preferences

• Gingles 2: Is voting racially polarized? If so, who are the candidates of choice?

• Gingles 3: Are the minority voters’ candidates of choice usually defeated?

  – All questions speak to racial bloc voting, are assessed with the same set of measures, and must be answered affirmatively.
Racially Polarized Voting (RPV)

• The secret ballot

• Available statistical methods
  – Homogenous precincts
  – Bivariate ecological regression
  – EI 2 x 2 (King, 1997)
  – EI R x C (Rosen, et al. 2001)
Data Requirements

• Three pieces of data required *(all at the voting precinct level of geography)*
  – Candidate vote totals
  – Candidate race/ethnicity, Party ID, incumbency, & other notes
  – Electorate by race/ethnicity

Turnout
↓
Registration
↓
Voting Age Population
Homogeneous Precincts

• Primitive

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<th>Candidate B</th>
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<td>Black Support (N = 2)</td>
<td>5%</td>
<td>90%</td>
</tr>
<tr>
<td>White Support (N = 5)</td>
<td>80%</td>
<td>15%</td>
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• Makes a lot of ‘assumptions’
• Relies on existence of homogeneous precincts
• Great for eye-balling data
Ecological Regression (ER)

- Bivariate regression
- Summarizes relationship between two variables: racial/ethnic composition of the precinct and votes cast for a candidate in the precinct
- Using data from all precincts
- Can give unrealistic results

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Ecological Inference (EI)

- Developed by Gary King in 1997 in *A Solution to the Ecological Inference Problem*
- Process of inferring individual-level behavior from aggregate-level data
- Incorporates ‘method of bounds’ (Duncan and Davis 1953)
- Uses bounds with maximum likelihood estimator
- One EI statistic provides minority and ‘other’ vote estimates for a single candidate
- Results are estimates

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EI R x C

- Developed by Rosen, Jiang, King, and Tanner in 2001 in *Bayesian and frequentist inference for ecological inference: the R x C case*
- EI R x C provides estimates of support for multiple groups for a single candidate
- Bayesian Multinomial-Direchlet hierarchical model
- Better model for contest with more than 2 race/ethnic groups
- Not yet widely used
- Computational demands
The Legal Balancing Act
The 2020 Decennial Census

Participate!
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Intro to GIS Distance Analyses:
https://github.com/MeganGall/Tufts_GIS