

The Original "Gerrymander"



- Named for Elbridge Gerry, Governor of Mass., 1810-12
- Later Vice President under Madison
- Plan elected Republicans 29-11, even though they received only 57% of the popular vote.



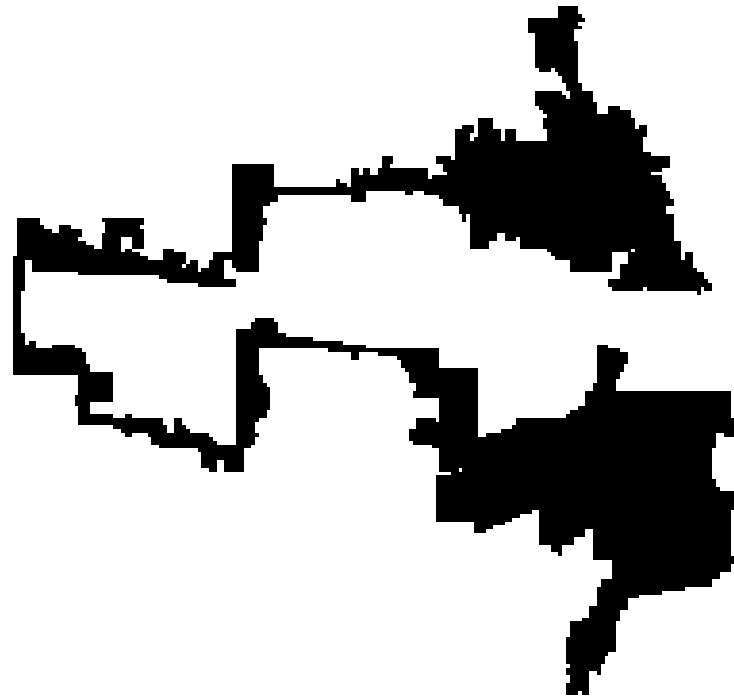
Florida 3rd (Black majority)



“Gnawed Wishbone”



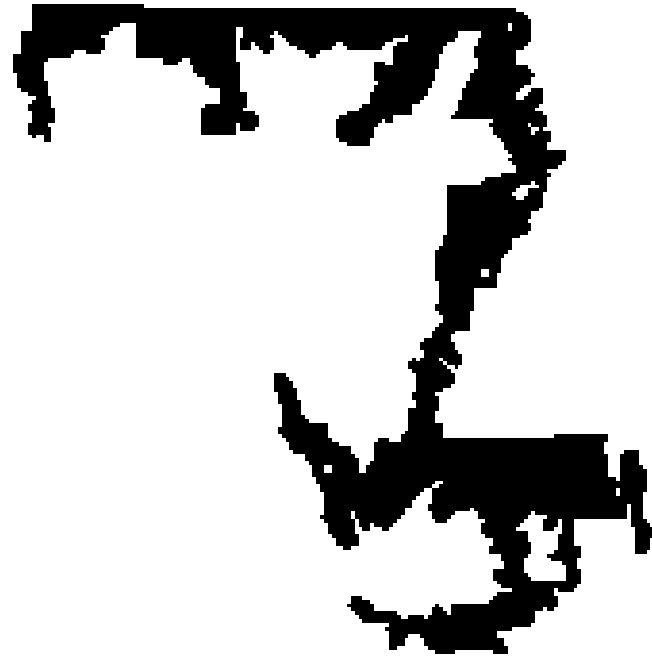
Illinois 4th (Hispanic majority)



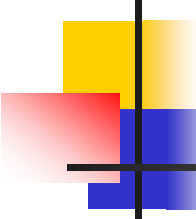
"Pair of Earmuffs"



Louisiana 4th (Black majority)



“Mark of Zorro”



New York 12th (Hispanic Maj.)



“Bullwinkle”



Texas 29th (Hispanic Majority)



“Bird with Plumage”

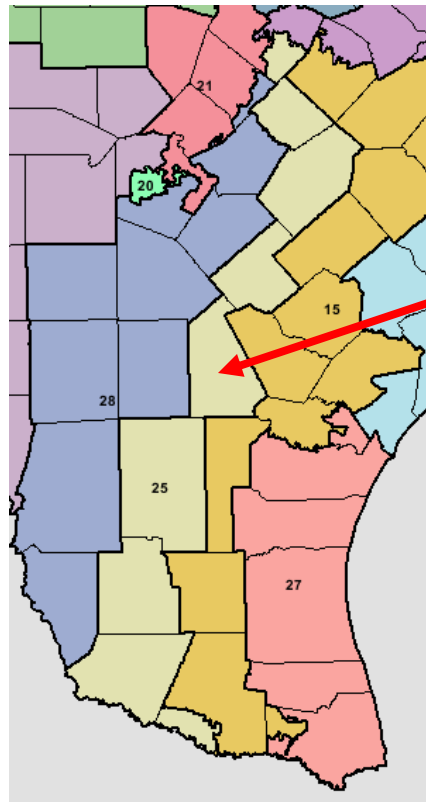


Texas 30th (Hispanic Majority)



- 1) "Microscopic View of a Disease"
- 2) "Flying Fossilized Reptile"

Texas 25th (Hispanic Majority)



District 25

“Cubist Worm”



Georgia 11th (Black majority)



“French Poodle Attacking with a Hatchet”



1965 Voting Rights Act Primer

- Section 2

- Swept away all states laws imposing “tests or devices” on any individual’s right to vote
- Made illegal all state & local laws that “deny or abridge” minorities’ right to vote
- Permanent

- Implementation

- Many city councils elected at-large were forced to change to district-based elections



1965 Voting Rights Act Primer

- Section 5

- Covered states must receive federal approval for changes in laws that may affect voting
 - Changes in Electoral Systems (but not legislative rules)
 - Annexation/De-annexation of suburbs
 - Redistricting
- Not permanent; up for renewal in 2007

- Implementation

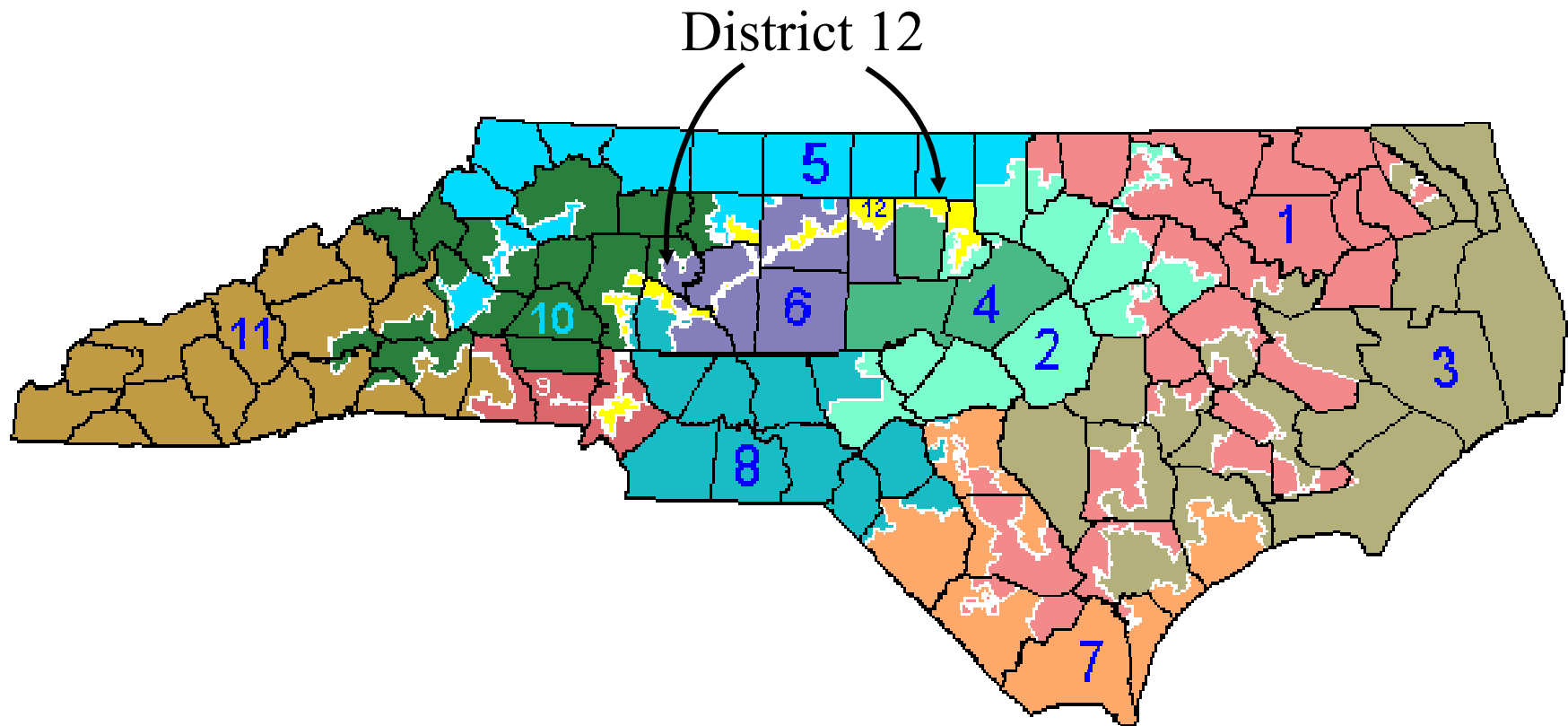
- Standard for preclearance was retrogression
 - I.e., couldn't go back to at-large elections
- Unclear how this applies to redistricting
- Assumption was that you would pass if you didn't reduce the number of majority-minority districts



BUT... Things Get *Ugly*

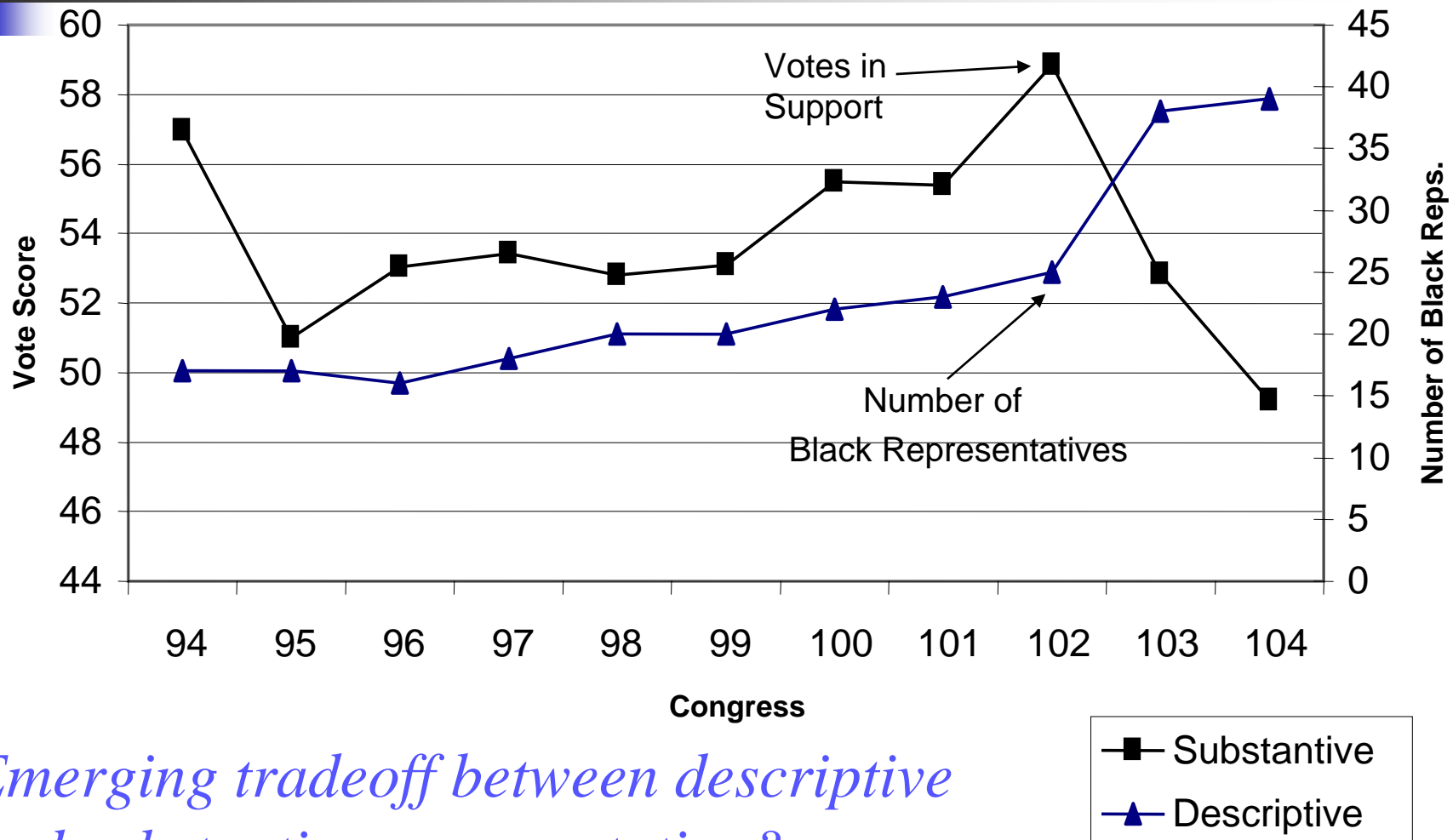
- After 1990 Census, North Carolina drew a map with one majority-minority dist.
 - Same as they had in the 1980's
- DOJ (surprisingly) denied preclearance
 - Said NC could have created a second, but didn't, for discriminatory reasons
- So the state went back to the drawing board and made a second M-M district

North Carolina Congressional Districts, 1992-1997



Overtaken in *Shaw v. Reno* as unconstitutional racial gerrymander
State had to go back to the drawing board again

Descriptive and Substantive Representation, 1975-1996



Emerging tradeoff between descriptive and substantive representation?



Theory

- Key to passing legislation important to minorities is coalition building
- Two strategies to accomplish this:
 - 1) Elect minorities to office and have them bargain in the legislature
 - 2) Spread minorities out more, and have them part of an electoral coalition
- Question: Given current conditions, which strategy maximizes substantive representation?



Approach

- How would you draw districts to maximize the votes in favor of minority-supported legislation?
 - Automatically accounts for the fact that more Blacks → more Republicans too
- Is this different from the strategy to elect as many Blacks as possible?
- How has this changed over time?



Methodology

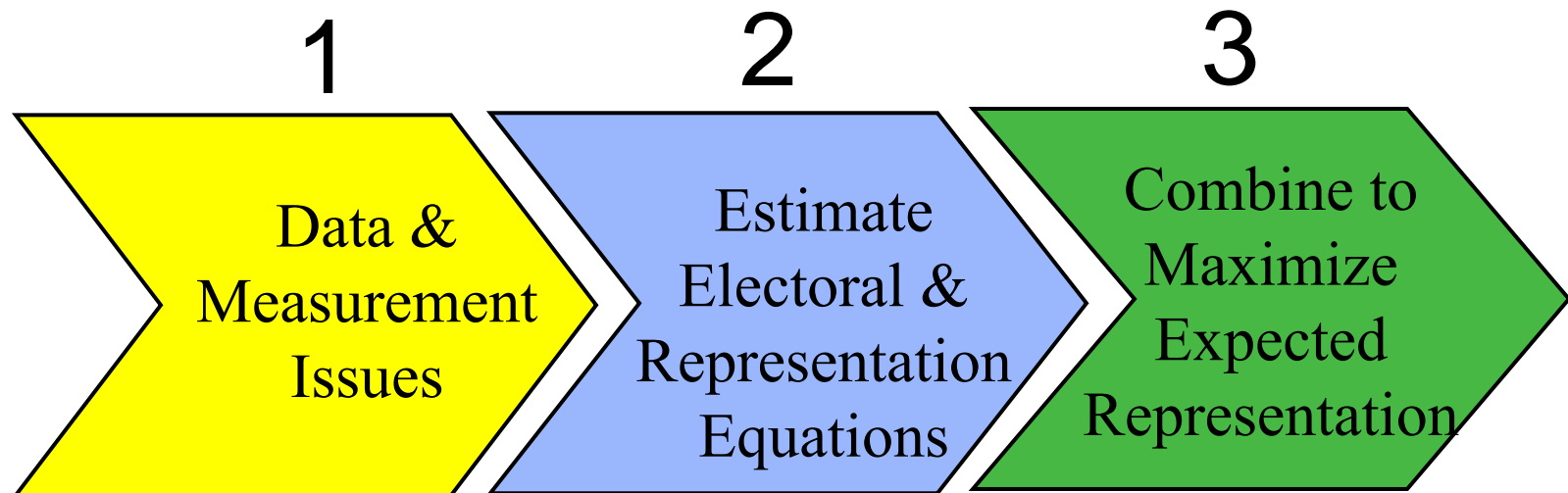
- To calculate optimal districting schemes:
 1. Determine relationship BVAP \Rightarrow Roll Call Voting in Congress (**Representation Effect**)
 2. Determine relationship BVAP \Rightarrow Type of Representative Elected (**Electoral Effect**)
 3. Combine 1 & 2 to maximize average expected LCCR score across districts.

$$E(VS | BVAP) = \sum_{\theta} E(VS | \theta, BVAP) \bullet P(\theta | BVAP)$$

Representation **Electoral**
Equation **Equation**

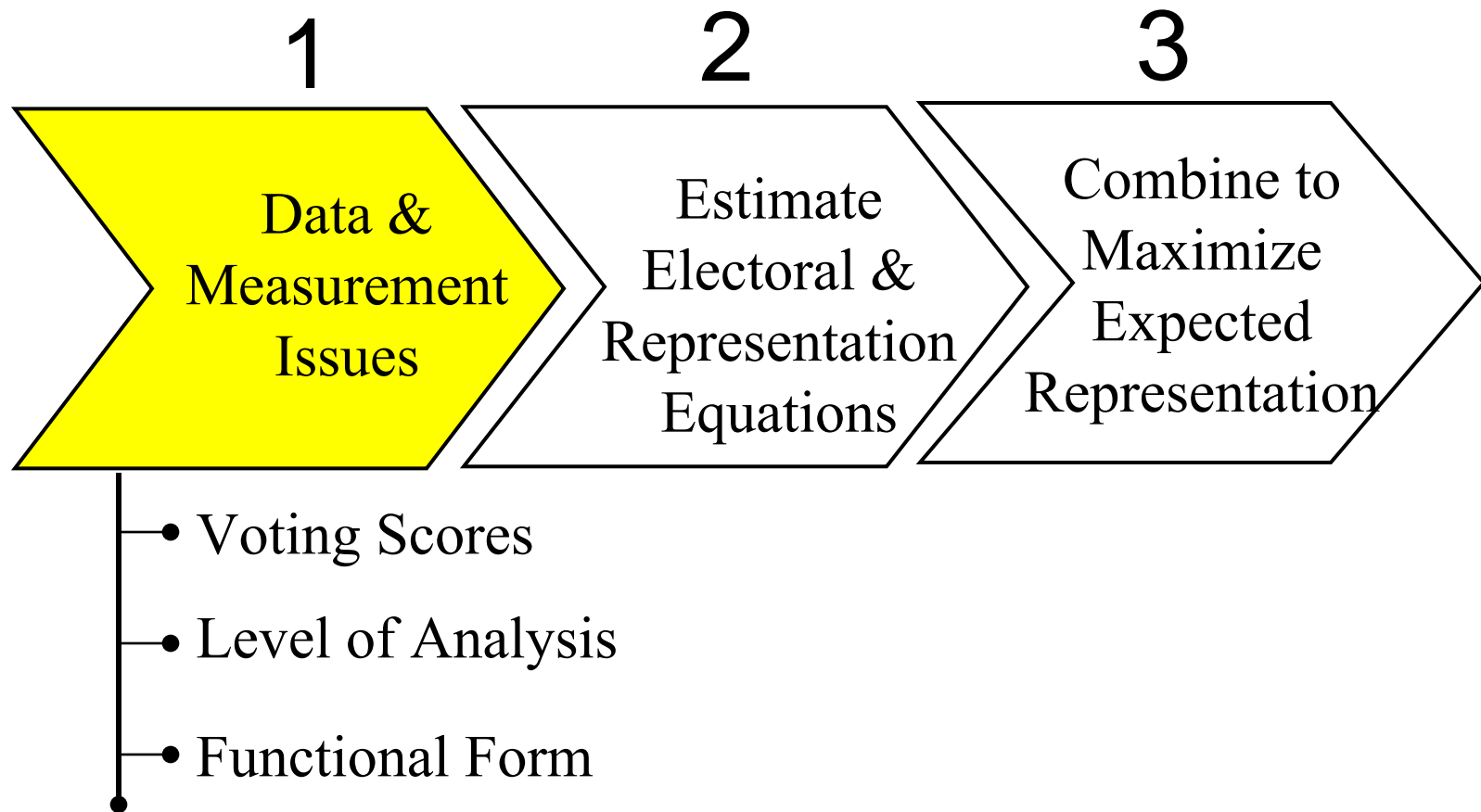


Estimation Strategy





Estimation Strategy

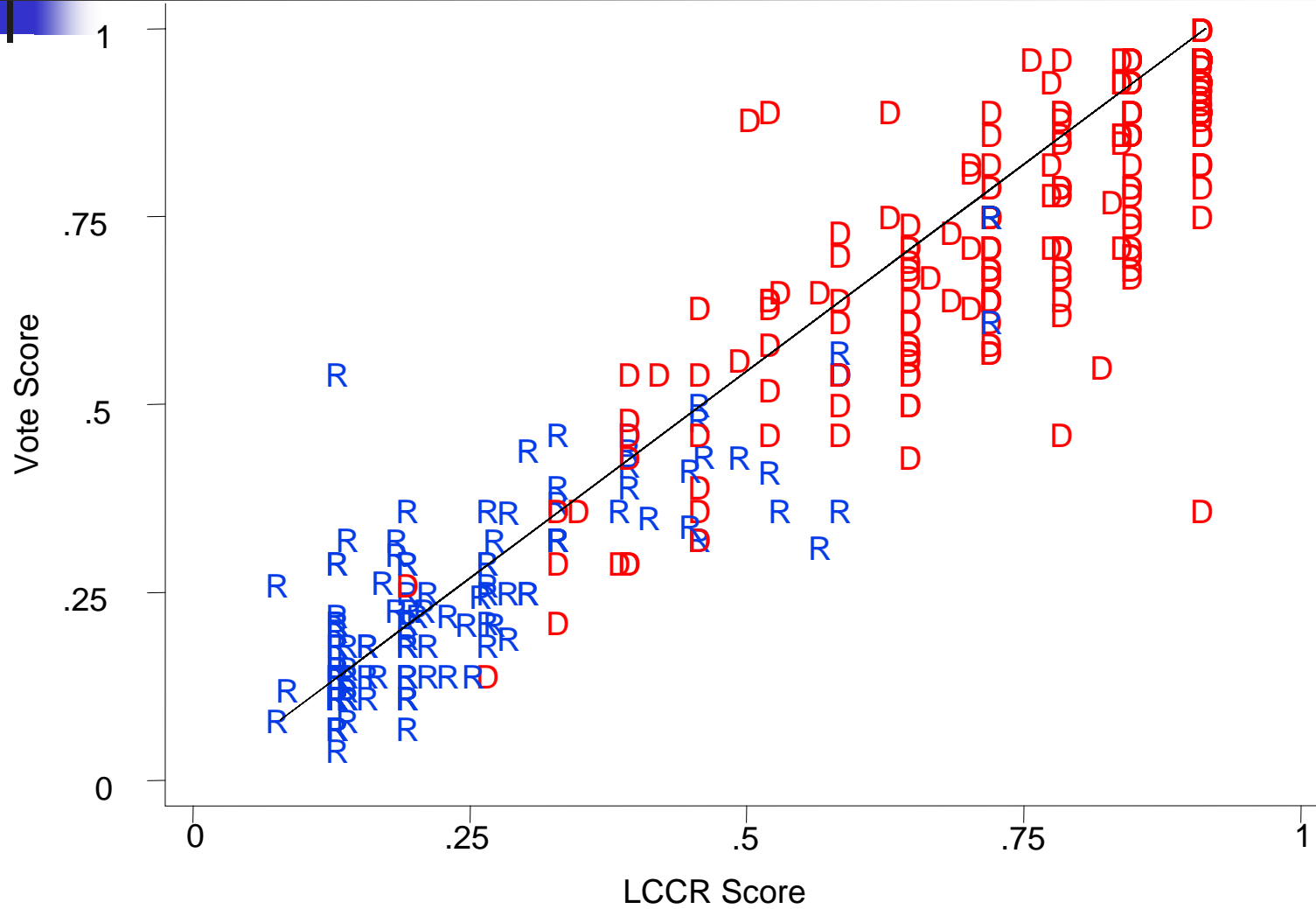




Descriptive Statistics

<i>VARIABLE</i>	<i>DESCRIPTION</i>	<i>SOURCE</i>
LCCR	Member's civil rights voting record.	Leadership Conference on Civil Rights, Civil Rights Voting Record for the 103rd Congress.
VoteScore	Support for measures in which over 60% of black representatives voted alike.	<i>Congressional Quarterly</i> Key Votes of the 103rd Congress
Party	1 for Republicans; 0 otherwise.	1994 <i>Almanac of American Politics</i>
Race	Race of member coded 1 for black; 0 otherwise.	<i>Congressional Quarterly</i> , vol. 52, supplemental to issue no. 44, p. 10.
BVAP	Percent black voting age population in the district.	1990 Census data
Cover	1 if district is covered under Section 5 of the VRA; 0 otherwise.	<i>Handbook of U.S. Election Laws and Practices</i> , 249-51 & 257-62 .
South*	1 for southern states; 0 otherwise.	<i>Congressional Quarterly Almanac</i> , 1994
East**	1 for eastern states; 0 otherwise.	<i>Congressional Quarterly Almanac</i> , 1994

LCCR vs. Vote Scores





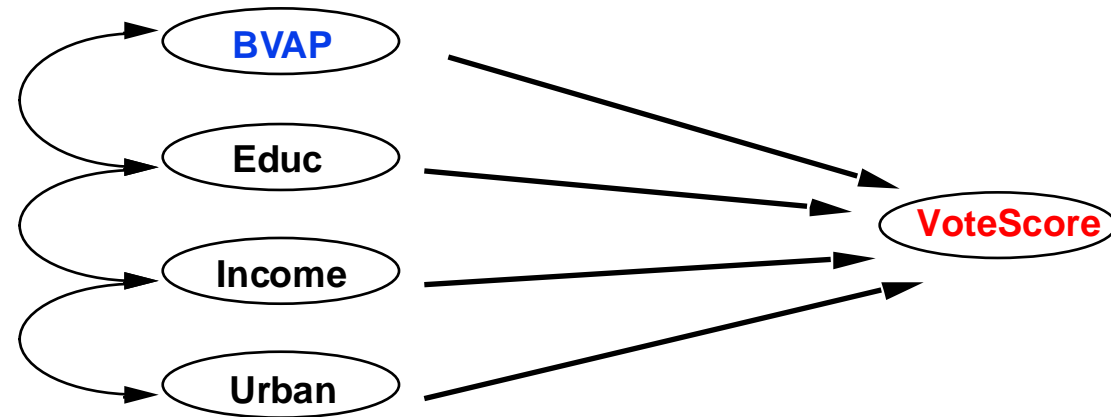
Level of Disaggregation

Six Subgroups of Representatives

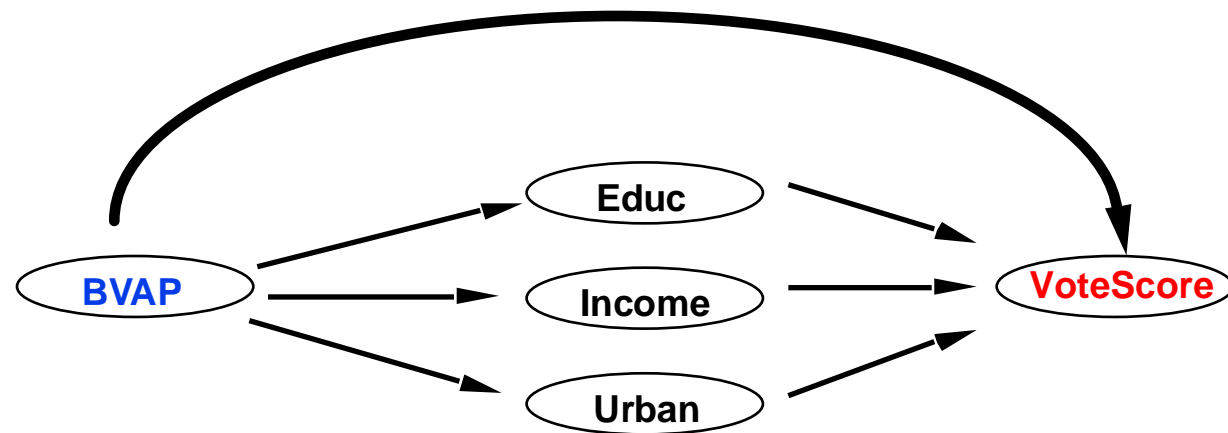
Region Type	South Covered	South non-Covered	Other	Northeast
Republicans	1			2
Non-Black Democrats	3	4	5	
Black Democrats	6			

Estimation Approaches

Multivariate

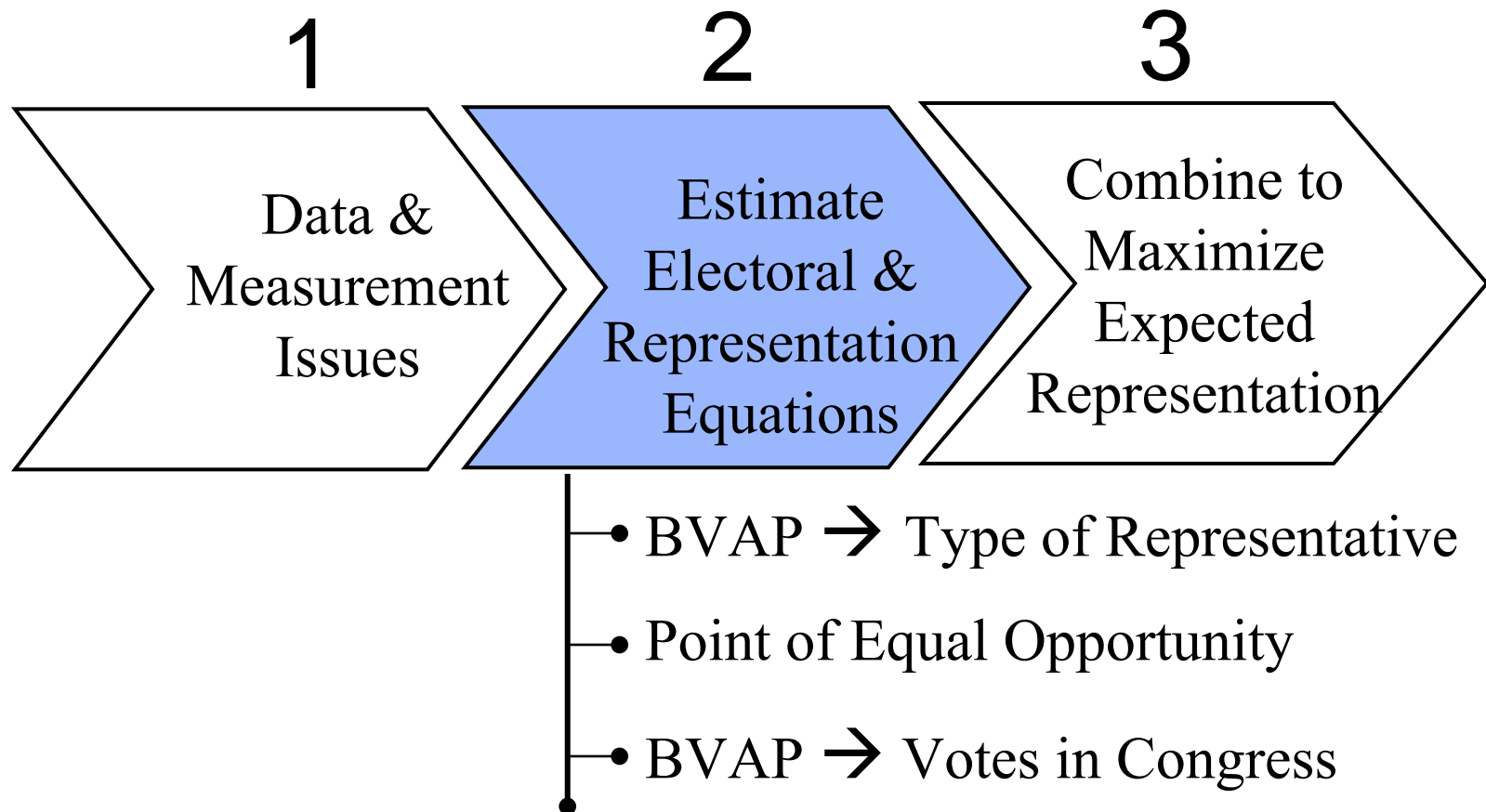


Bivariate





Estimation Strategy





Electoral Equations

- Estimate—**BVAP**→**Type Elected**
- Method—Use ordered probit:
 - Dependent Variable
 - White Democrat
 - Black Democrat
 - Republican
 - Independent Variable
 - BVAP
 - Regional effects

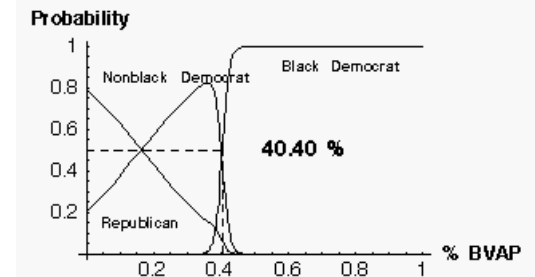
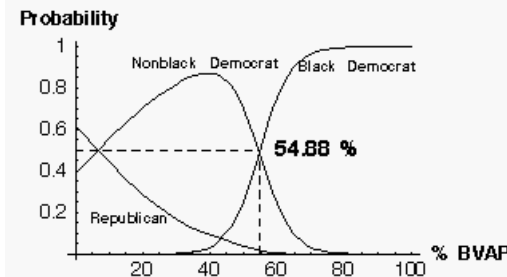
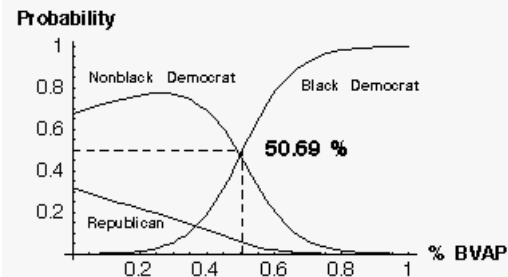
Electoral Equations

94th Congress

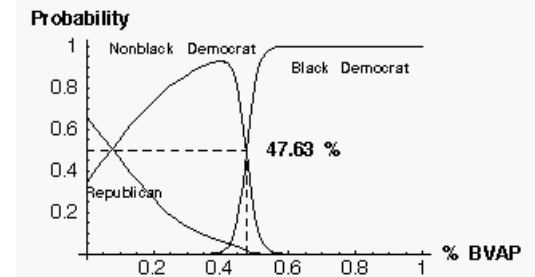
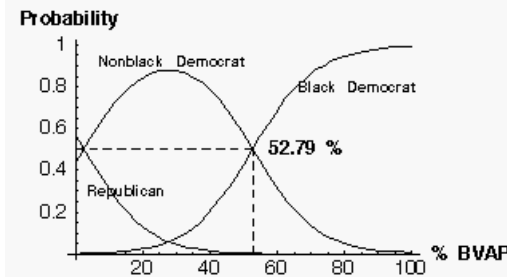
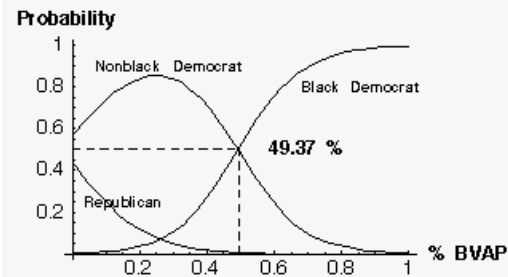
99th Congress

104th Congress

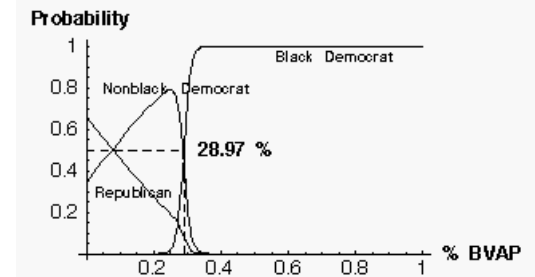
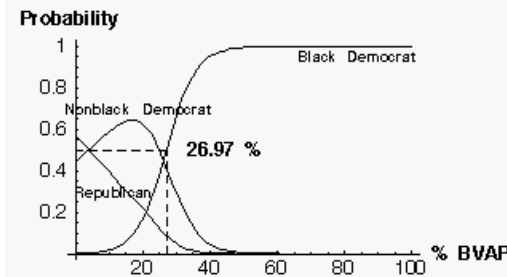
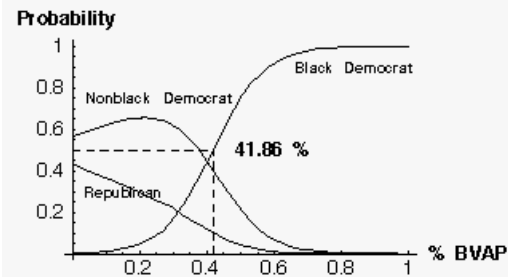
South



East



Other



Decreased polarized voting within the electorate.



Representation Equations

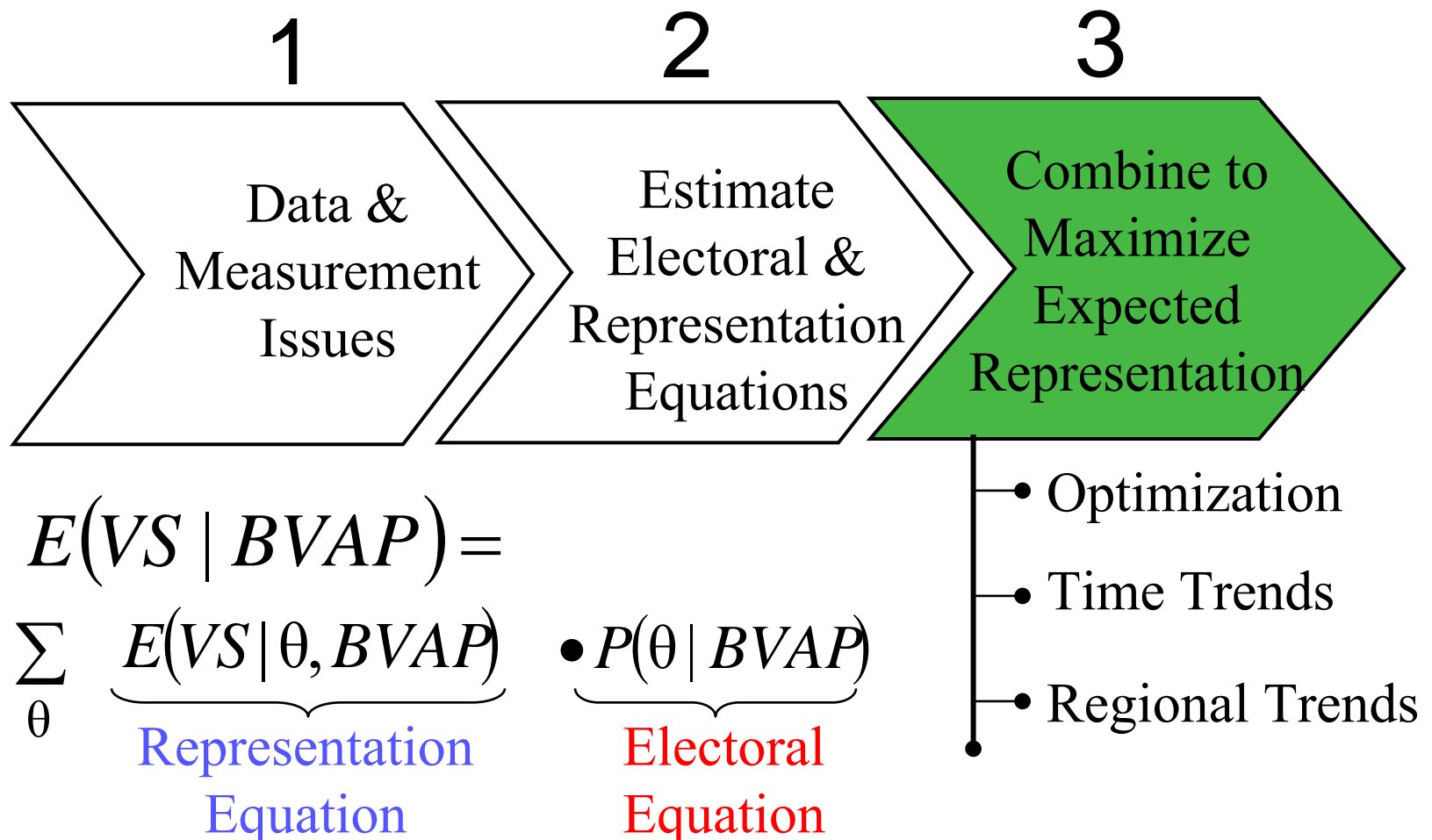
- For each subgroup, estimate **BVAP** → **Vote Score**
- Method: Test down from most general functional form to more restrictive.
 1. Fit general additive models using loess and smoothing splines;
 2. Test for non-linearities;
 3. If not important, use robust linear method (plus usual diagnostics);
 4. If important, reproduce in a parametric regression.

Mean and Median Vote Scores

<i>Congress</i>	<i>94th</i>			<i>99th</i>			<i>104th</i>		
Group	Mean Vote Score	Average BVAP	Number	Mean Vote Score	Average BVAP	Number	Mean Vote Score	Average BVAP	Number
(1) Non-eastern Republicans	20.93%	6.15%	106	15.55%	6.09%	139	24.17%	5.29%	185
(2) Eastern Republicans	40.97%	3.6%	38	36.00%	4.16%	43	34.98%	5.01%	45
(3) Non-black Democrats from covered Southern districts	42.76%	18.02%	62	52.33%	20.55%	47	53.78%	13.55%	36
(4) Non-black Democrats from non-covered Southern districts	56.78%	11.81%	27	60.06%	13.94%	33	61.09%	11.18%	11
(5) Non-southern Non-black Democrats	81.30%	5.52%	186	84.21%	6.71%	154	77.57%	6.41%	122
(6) Black Democrats	93.69%	46.86%	16	91.58%	52.42%	19	90.06%	54.72%	36
Overall Mean	56.53%	9.20%	435	52.55%	10.30%	435	49.10%	10.50%	435
Overall Median	64.00%	4.0%		53.50%	5.0%		37.00%	4.0%	

- ◆ *Scores are fairly constant within each group, differ across groups*
- ◆ *Increased partisan polarization within Congress*

Estimation Strategy



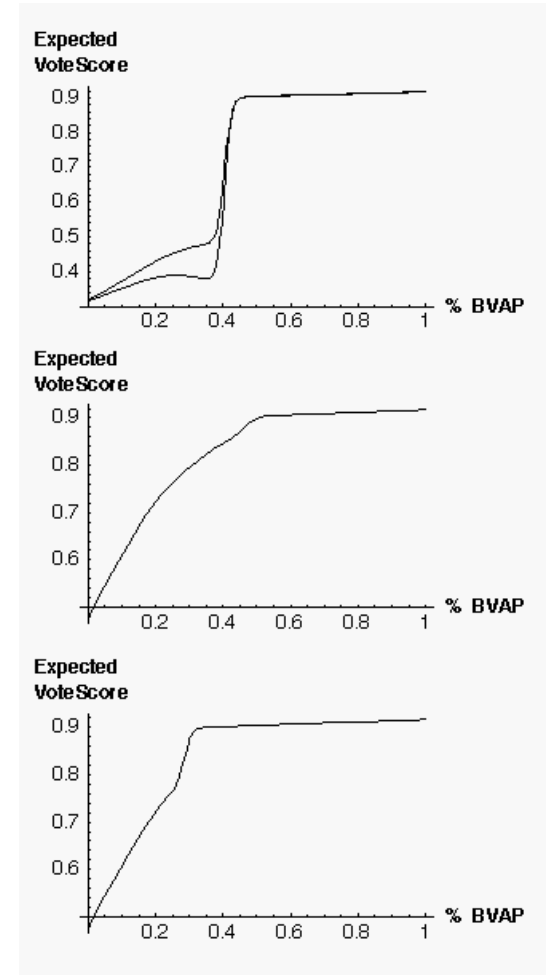
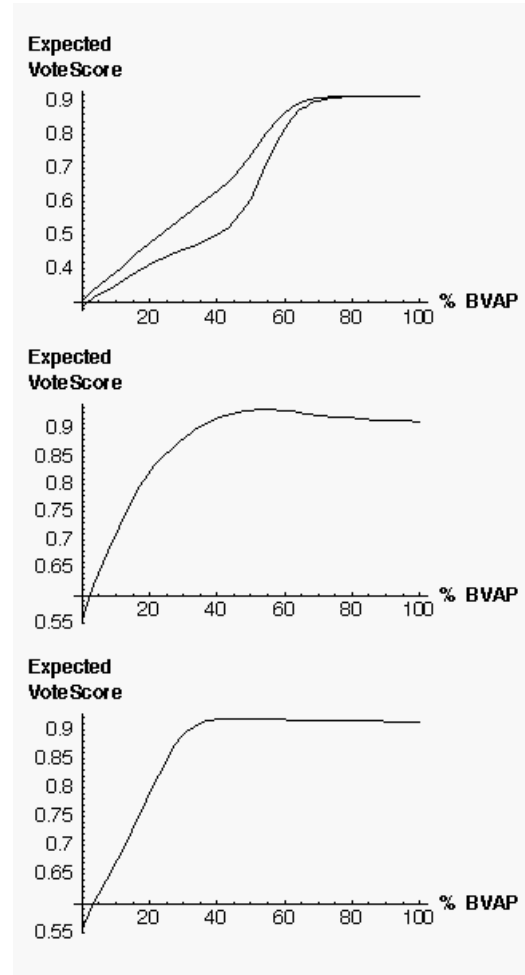
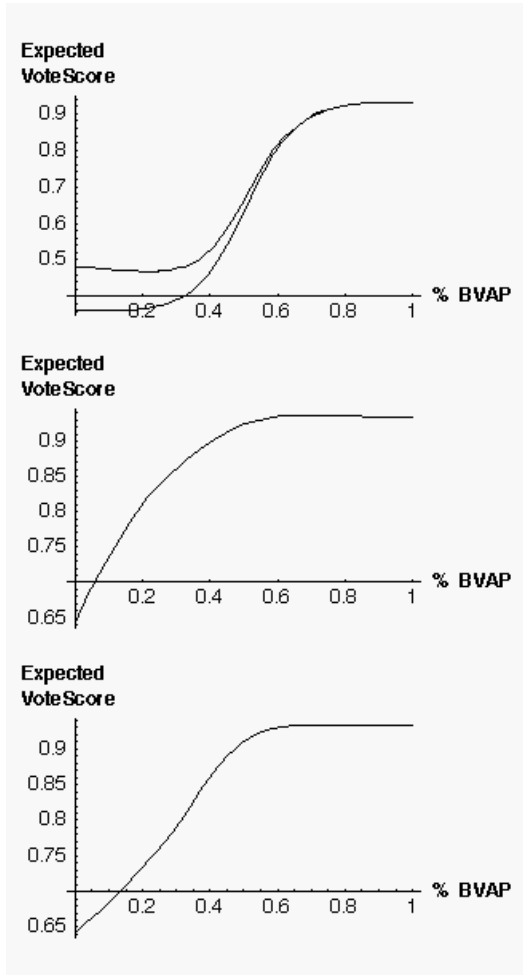
Total Representation

94th Congress

99th Congress

104th Congress

South

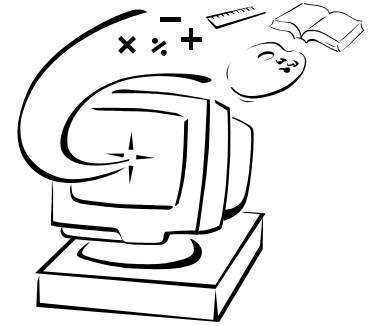


East

Other

General patterns consistent across time.

Optimization



- State with n districts, P_b black voters;
 - Let $\mathbf{b} = (b_1, b_2, \dots, b_n)$, and $VS(b_i)$ be the representation equation
- Optimal allocation of minority voters will:

$$\max_{\mathbf{b}} \sum_{i=1}^n VS(n * b_i), \text{ s.t. :}$$

$$(1) b_i \geq 0$$

$$(3) b_i \leq P_b$$

$$(2) b_i \leq \frac{1}{n}$$

$$(4) \sum_{i=1}^n b_i = P_b$$

- ◆ Automatically accounts for inter-district effects of gerrymandering.

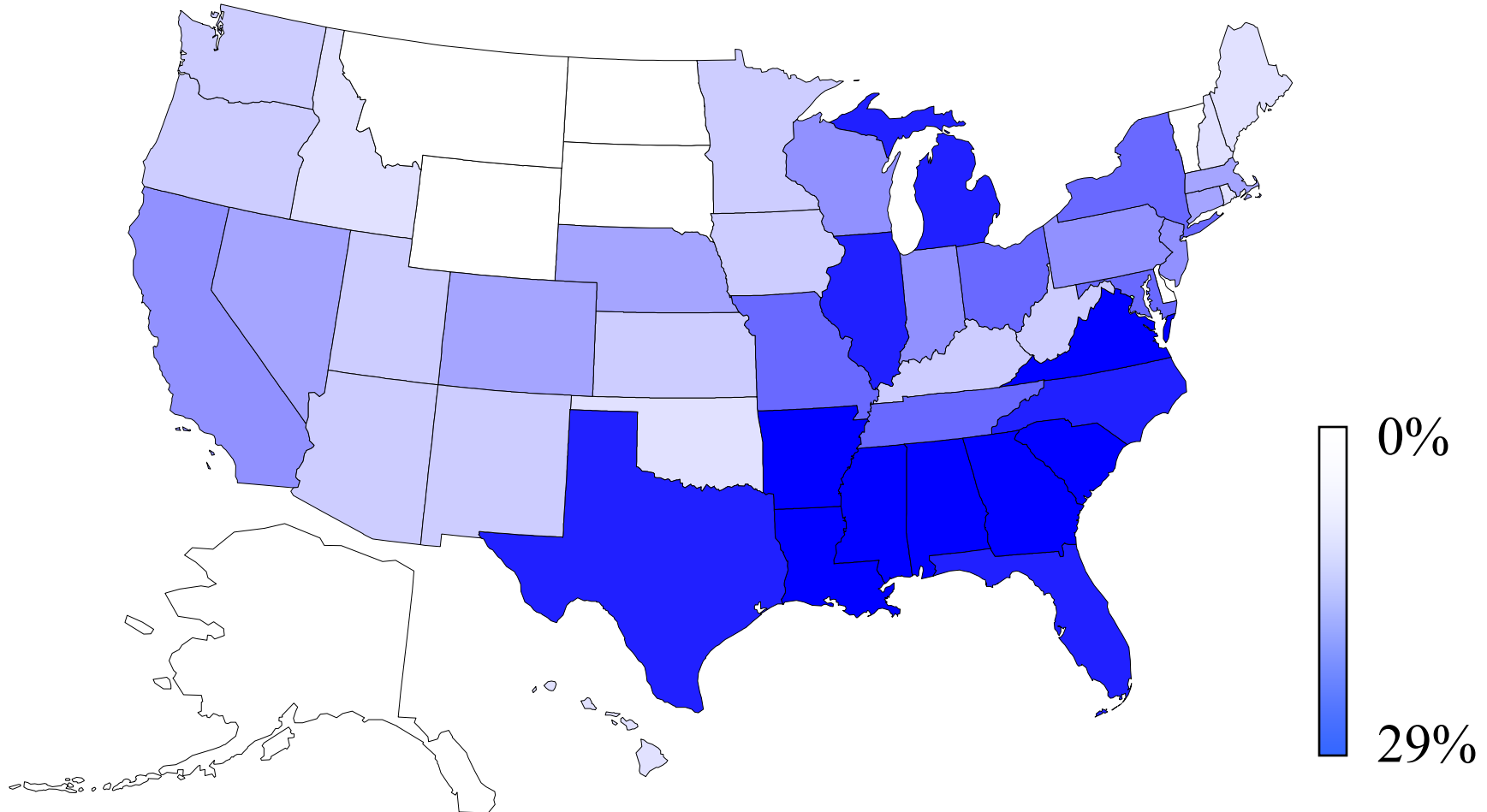


Optimal Districts for Substantive Representation

- In the 1970's: 100%
 - Concentrate black voters as much as possible
 - Essentially, no white will vote for black representatives
- In the 1980's: 65%
 - Strategy is still to elect blacks to office
- In the 1990's: 45%
 - Still a good chance of electing blacks
 - But less likely to elect Republicans nearby

Percent Deviation from Optimal Gerrymander

103rd Congress



Southern states are highly over-gerrymandered



Optimal Districts for Electing Minorities

- We put equal opportunity at 40%
 - Criticized at the time
 - But subsequent elections have seen blacks win 11 of 15 southern seats from 40-50% districts
- Drawing districts to maximize the number of minorities elected: **57%**
- So there is a tradeoff between descriptive & substantive representation



Current Events

- So maximizing policy influence now means reducing BVAP in some districts
- This was the issue in *Georgia v. Ashcroft*
 - Black legislators supported a new plan that dropped some 63% districts down to 51%
 - DOJ objected under Section 5, claiming that this was retrogression
- Court said minorities could choose to trade off descriptive & substantive rep.



Possible Application to Texas

- New plan left pre-existing majority-minority districts intact
 - But reduced the number of White Dems
- So descriptive representation is the same, substantive representation falls
- Is this OK?
 - No: this is retrogression under *Ashcroft*
 - Yes: Otherwise only Democrats can gerrymander for partisan reasons



Conclusions

- Tradeoff between descriptive and substantive representation has developed over time
 - Decreased polarized voting in the electorate
 - Increased partisan polarization in Congress
- To maximize substantive representation:
 - Outside South: equal-minority districts
 - South: ~45% districts
- Black candidates can win election outside of majority-minority districts