

Redistricting and Gerrymandering: Current State of Play

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My Introduction to the Subject



GERRYMANDERING WORKSHOP @ DUKE

a regional site of the Geometry of Redistricting workshop cycle

<https://sites.duke.edu/gerrymandering/>

What Are Redistricting and Gerrymandering?

- *Redistricting* is the decennial process of redrawing congressional and legislative district boundaries
- *Gerrymandering* is drawing the lines in a way that influences the outcomes of elections



Types of Gerrymandering

- *Racial* Prohibited by Voting Rights Act (1965)
 - Discriminatory effect
 - Group sufficiently large and compact?
 - Minority votes in a bloc?
 - Majority bloc votes against minority?
- *Partisan* Under review by Supreme Court
- *Nonpartisan* Protects incumbents regardless of party

What Gerrymandering Is Not

"A 'gerrymander' is by definition and common understanding, a strange looking 'monster' drawing. This map is clearly not that." –Robin Hayes, NC Republican Party Chair (10-Jan-2018)



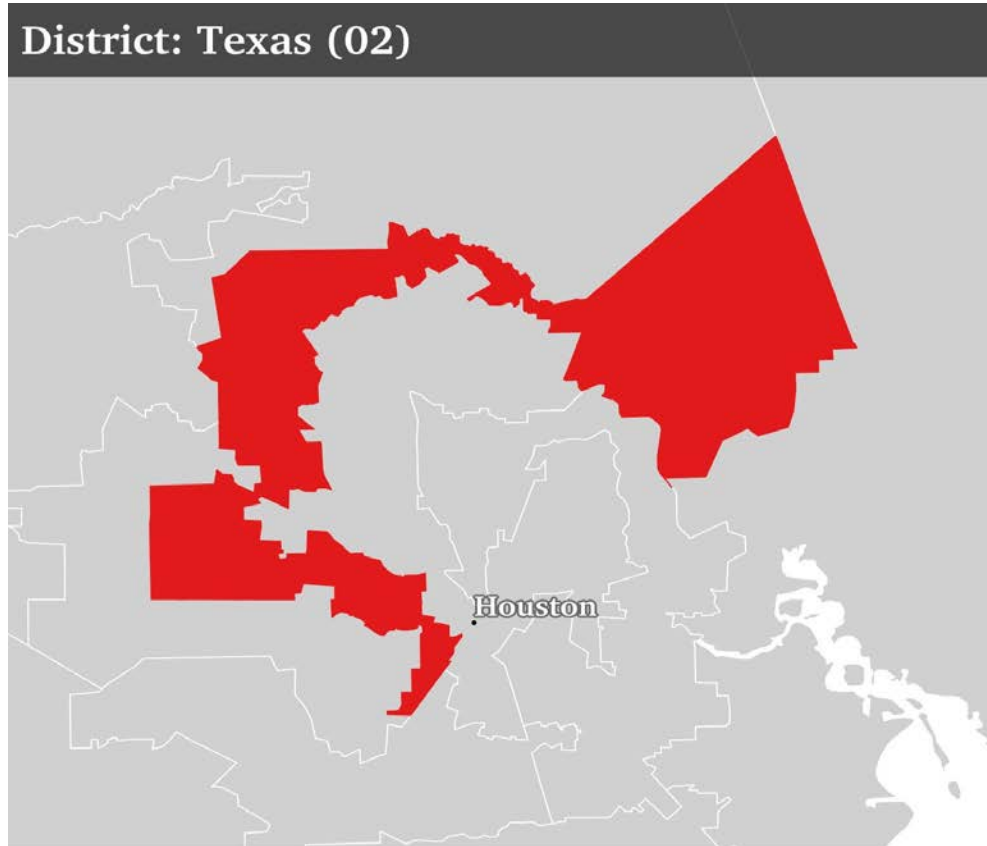
NC-2 and NC-4 "Some sort of ogre eating a squirrel."

General Principles For Districts

- Equal populations
 - “One person, one vote” (Reynolds v. Sims, 1964)
- Contiguous and “compact” (whatever that means)
- Should not break up “communities of interest”
- Respect existing political boundaries (municipalities, counties)
- Must not unduly disadvantage minority voters
 - Voting Rights Act of 1965

Compact?

District: Texas (02)



114th Congress

Rep: Ted Poe

Party: Republican

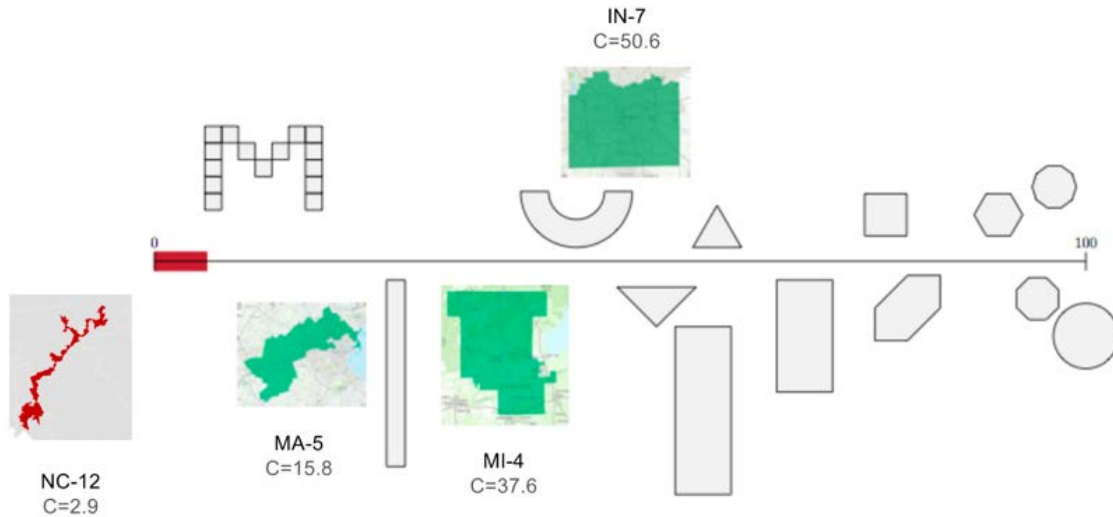
Data source: USGS
http://nationalmap.gov/small_scale/mld/cgd114p.html

Mapping: Alasdair Rae, University of Sheffield

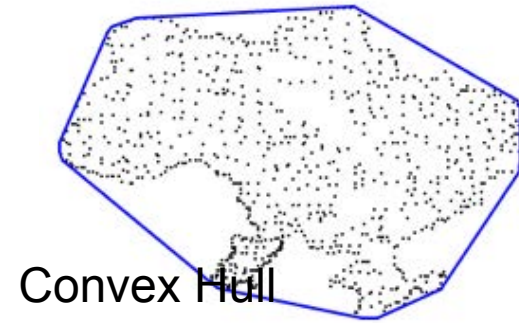
Measuring Compactness

- Compare district area to some “ideal” area
- Gives a number between zero and one
- *Polsby-Popper* $A = \text{area}$, $P = \text{perimeter}$, then $4\pi A/P^2$
 - Ratio of area to area of a circle with same perimeter
- *Reock score*
 - Smallest enclosing circle
- *Convex hull*
 - Smooth out all indentations (“rubber band enclosure”)
- Different measures score the same shape differently

Compactness In Pictures



Polsby-Popper



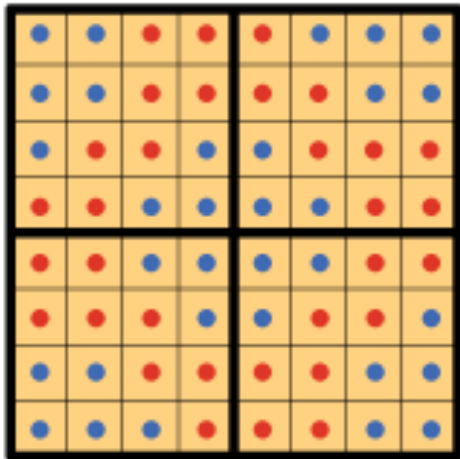
Other Issues With Shape

- What is perimeter?
 - Coastline paradox
- What are unbreakable units?
 - Census blocks, block groups, tracts
 - Split precincts
- Shape vs. other criteria
 - Communities of interest
 - Minority or party distribution

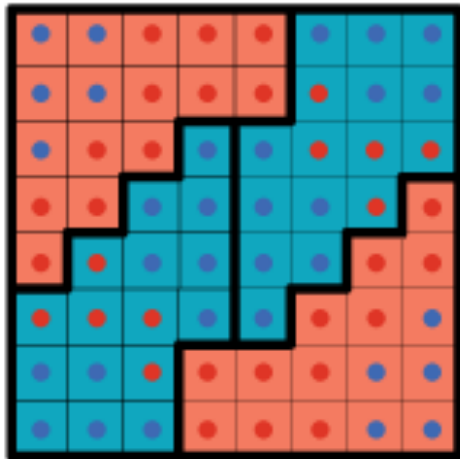
How To Gerrymander

- “Cracking”
 - Splitting communities among several districts to ensure that they don’t constitute a majority in any of them
- “Packing”
 - Concentrating communities into a few districts where they win overwhelmingly, but not enough seats to have influence in the legislature

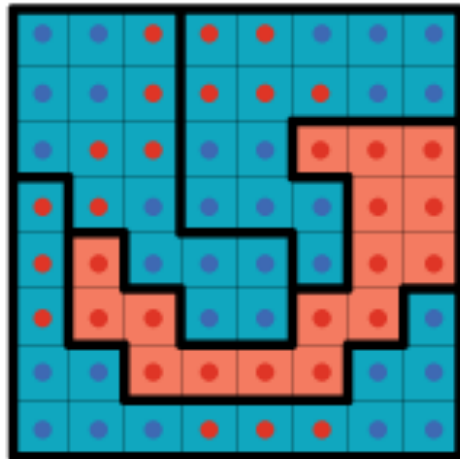
How To Gerrymander



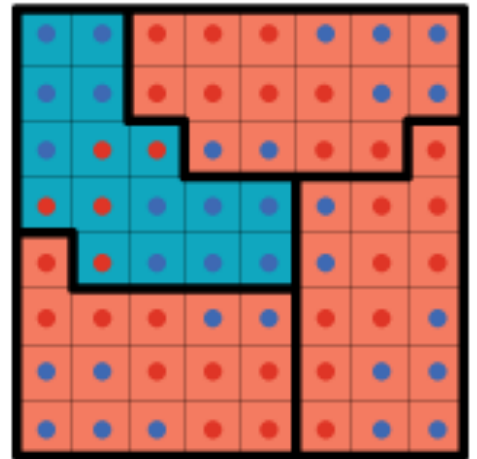
1. COMPETITIVE



2. SWEETHEART



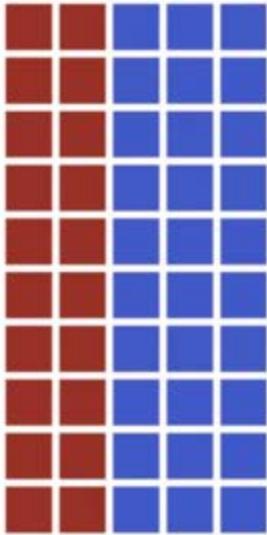
3. PACKING



4. CRACKING

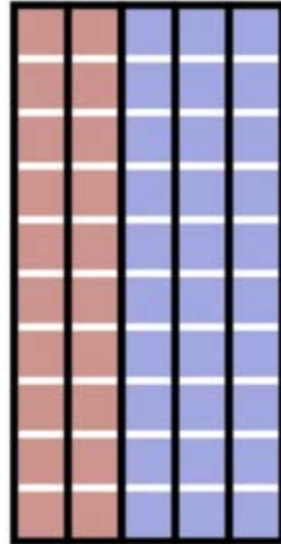
How To Gerrymander

50
people



**60% blue,
40% red**

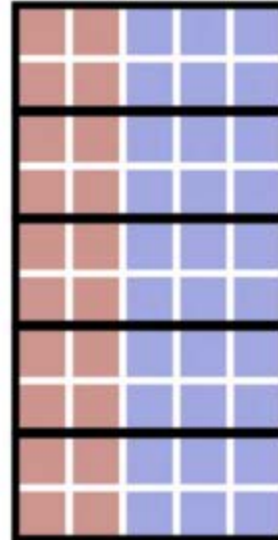
1. Perfect
representation



**3 blue districts,
2 red districts**

BLUE WINS

2. Compact,
but unfair



**5 blue districts,
0 red districts**

BLUE WINS

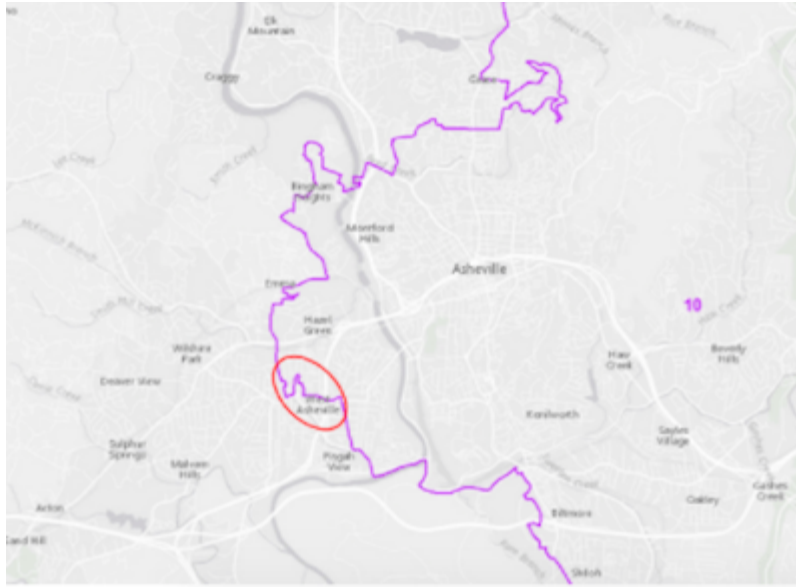
3. Neither compact
nor fair



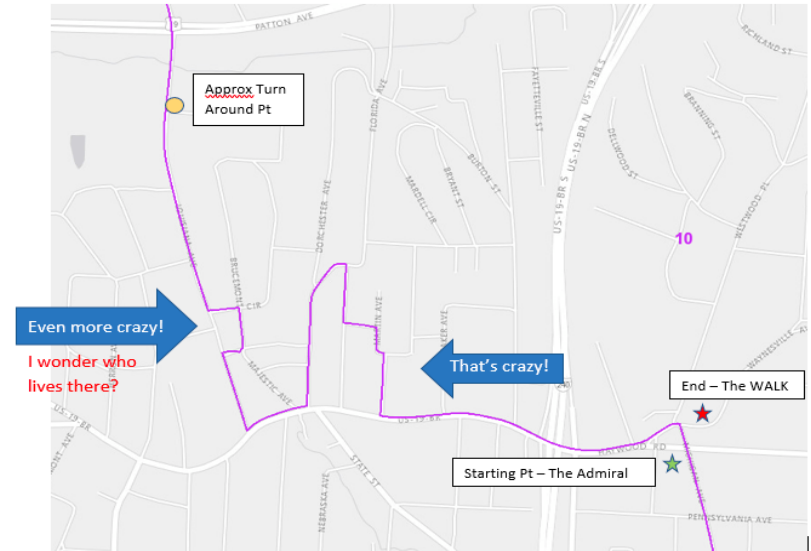
**2 blue districts,
3 red districts**

RED WINS

Cracking: What's Going On Here?



NC11-NC12 Asheville



“Gerrymander 5K” Route

How To Measure Partisan Gerrymandering Extent

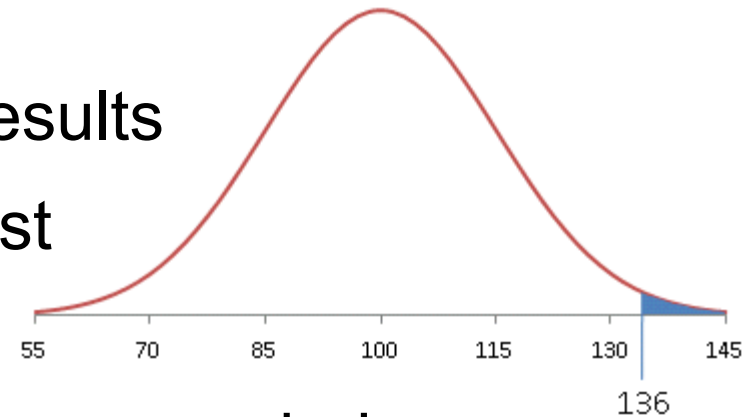
- “Efficiency” of a vote
 - A vote is considered wasted if it is
 - A vote for the losing candidate
 - A vote for the winning candidate over the minimum needed to win ($50\% + 1$ vote)
- “Efficiency Gap”
 - Total of losing party’s wasted votes minus total of winning party’s wasted votes, divided by total votes
- A rough guide
 - Fraction of losing party seats compared to fraction of losing party votes

Efficiency Gap Example

- Five equal-sized districts
 - Democrats win two, 76% to 24%
 - Republicans win three, 59% to 41%
- Democrats waste 26% in each win, 41% in each loss
- Republicans waste 9% in each win, 24% in each loss
- Efficiency gap
 - $(26+26+41+41+41-24-24-9-9-9)/5 = 20\%$ in favor of Republicans
 - Democrats receive 55% of the vote but win only 40% of seats

How Extreme Is An Outcome?

- Simulation
 - Draw lots of nonpartisan maps
 - Check outcomes using precinct results
 - Test likelihood of outcomes at least as extreme as actual
- An unlikely outcome is evidence of gerrymandering



When Is The Gap Too Big?

- Technical evidence
 - Significant increase over past elections
 - Significantly more than other locations
 - Significantly more than other possible maps (simulation)
 - Insensitive to plausible shifts in voter preferences
- Legal evidence
 - Intent to discriminate
 - Effect is discriminatory
 - Other possible explanations
 - Natural clustering of Democrats in urban areas
 - Will need to build case law

Partisan Gerrymandering: Relevant Legal Cases

- Constitutional grounds
 - First Amendment (freedom of association)
 - Fourteenth Amendment (equal protection)
- *Vieth v. Jubelirer* (2004)
 - Justice Kennedy: Partisan gerrymandering could be justiciable if standards could be developed to identify it

Partisan Gerrymandering: Relevant Legal Cases

- Gill v. Whitford (2017, Wisconsin)
 - Republicans accused of political gerrymandering
 - Plaintiff's argument based on efficiency gap
 - District Court found for plaintiff
 - Heard at Supreme Court, 3-Oct-2017
 - “Sociological gobbledegook” – Chief Justice Roberts
 - “What becomes of the precious right to vote?” – Justice Ginsburg

Partisan Gerrymandering: Relevant Legal Cases

- **Benisek v. Lamone (2018, Maryland)**
 - Democrats accused of political gerrymandering
 - District Court found for defendants
 - Only one district involved
 - To be heard in Supreme Court (no date set)

Partisan Gerrymandering: Relevant Legal Cases

- **LWVNC v. Rucho (2018, North Carolina)**
 - District Court struck down current map as unconstitutional gerrymander by Republican-controlled legislature
 - Ordered maps redrawn by 24-Jan-2018
 - Supreme Court issued stay until appeal
 - Plaintiffs have requested expedited review

Partisan Gerrymandering: Relevant Legal Cases

- LWVPA v. Commonwealth of Pennsylvania (2018)
 - Republicans accused of political gerrymandering
 - “The gerrymander of the decade.” – Sean Trende (RCP)
 - State Supreme Court rules that district lines violate state constitution
 - New maps ordered by 9-Feb-2018
 - Appeal to Supreme Court not yet resolved

Action Items

- LWVSC supports South Carolina House bill H.4456 and Senate bill S.341
 - Nonpartisan commission, nonpartisan and non-sweetheart standards
- Contact your state legislators!
- 2020 census is in danger
 - Underfunding, partisan director, citizenship question
- Contact your federal legislators!