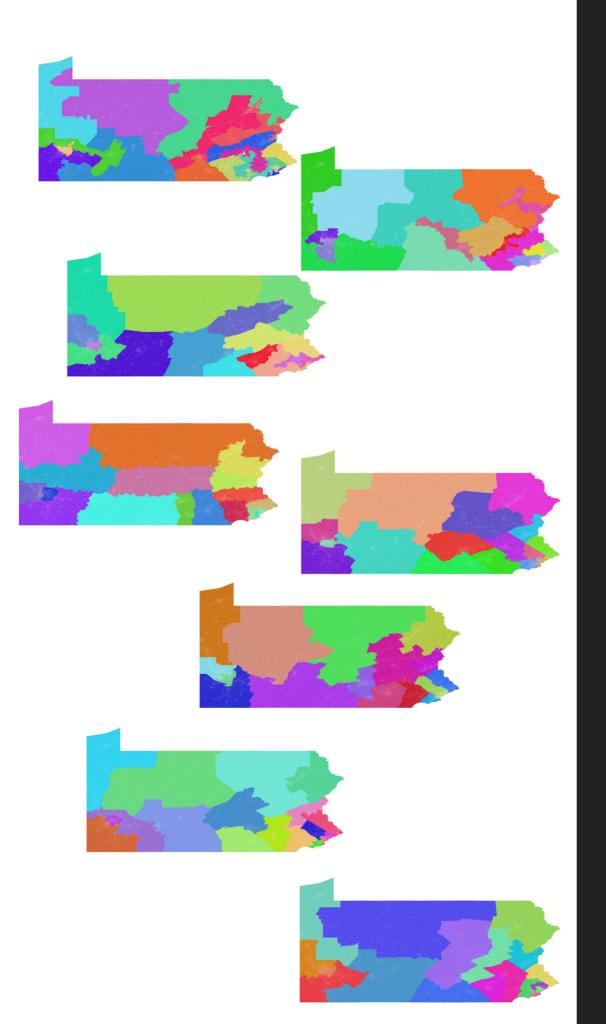


MOON DUCHIN

WHAT EVEN IS

PENNSYLVANIA?



MOON DUCHIN

WHAT EVEN IS (FAIR IN) PENNSYLVANIA?

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- Many or all nations are partitioned into administrative units
 –regions, departments, cantons, states.

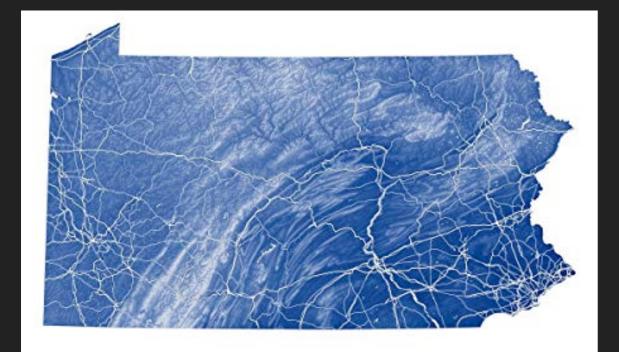
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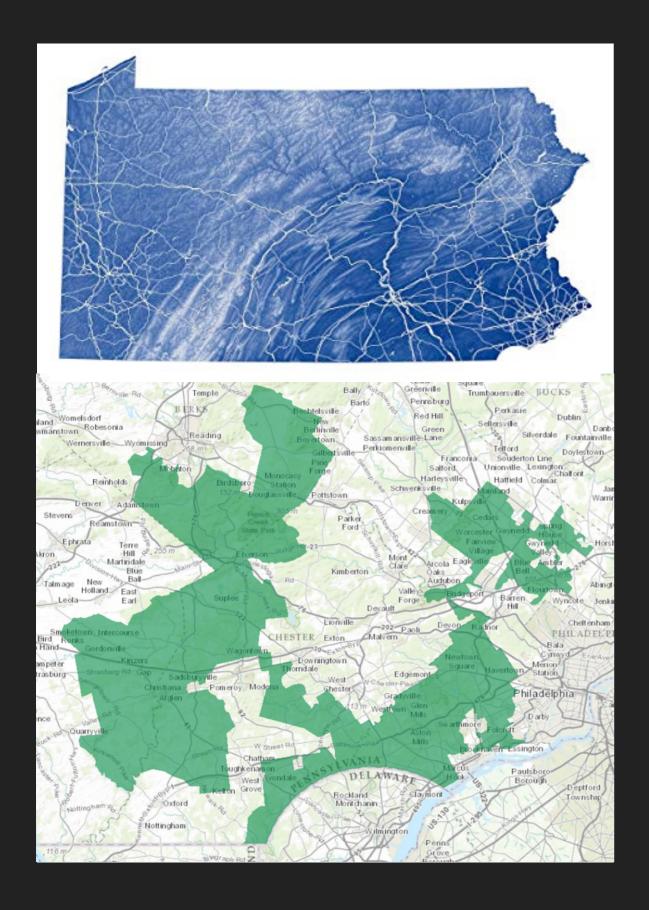
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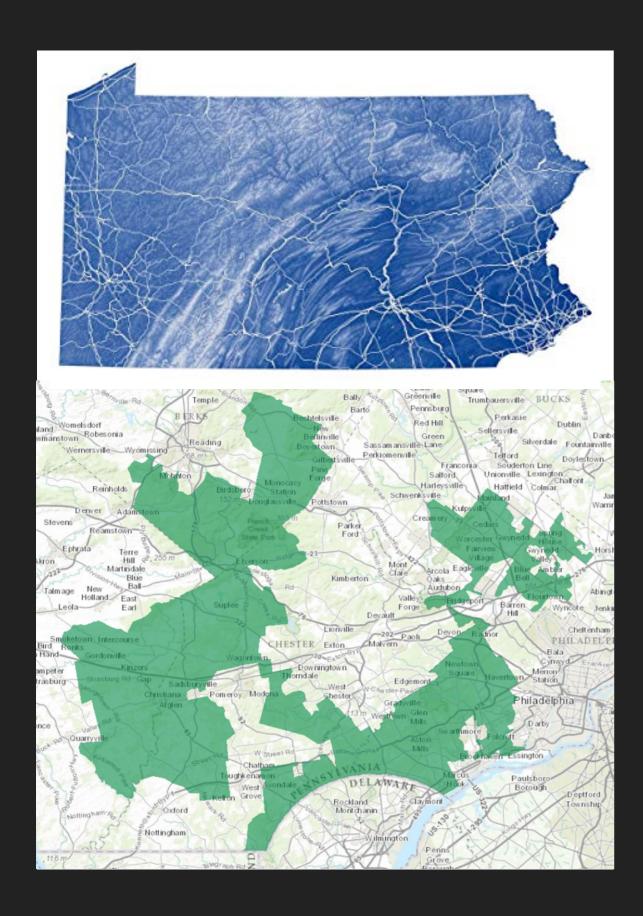
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- ▶ A different partition is the one into electoral units, like districts. E.g., 435 U.S. Congressional districts with winner-take-all elections every two years.
- The United States is the only country in the world that

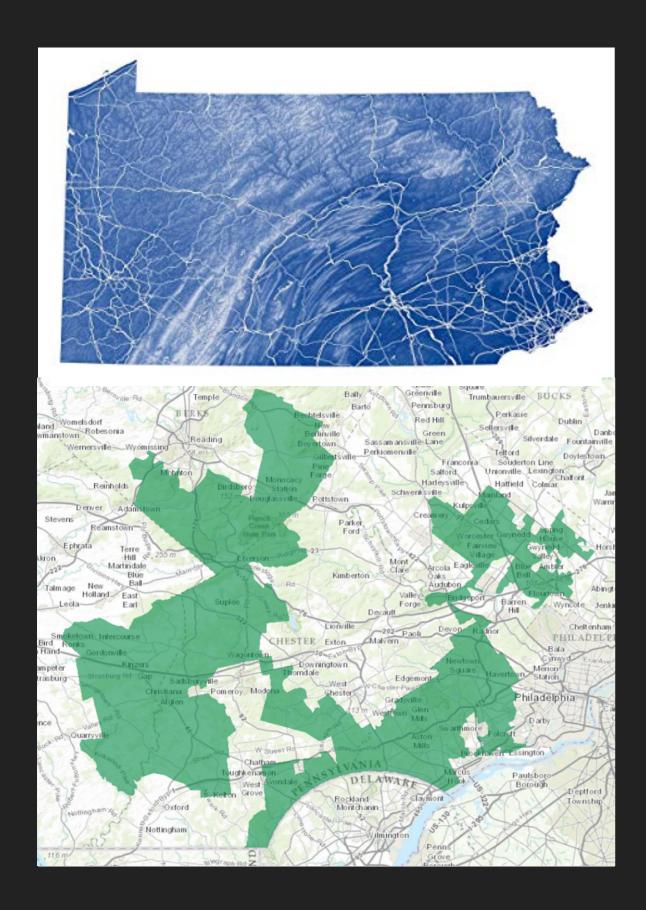
 (a) mandates regular re-drawing of districts, and
 (b) puts (partisan) elected officials in charge.







PA/DE arc dates to colonial-era edict of Charles II staking out the 12-mile radius around a certain Delaware cupola; shares a span with the alsonotorious Mason-Dixon Line



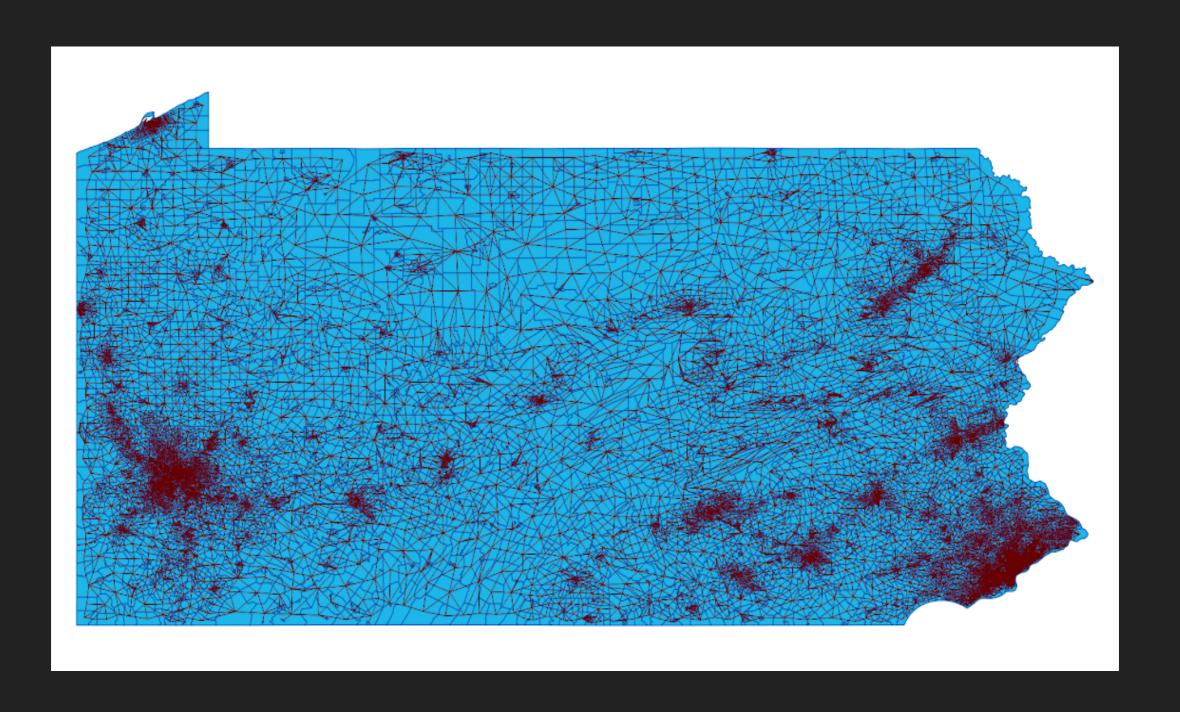
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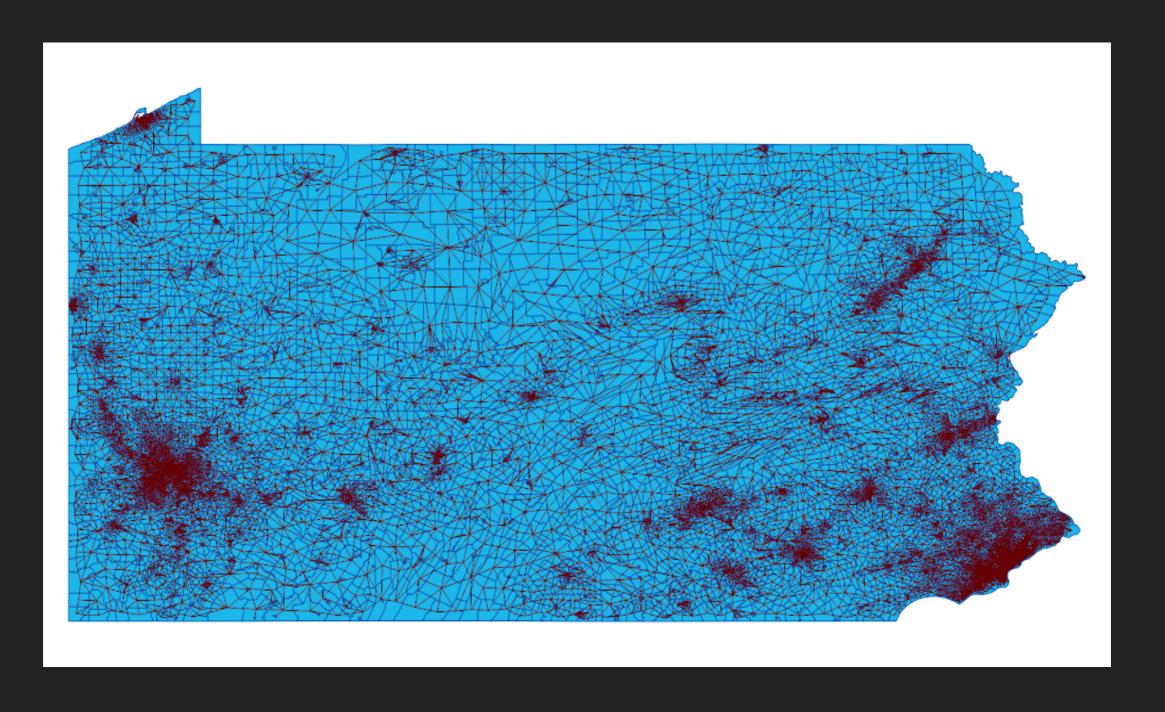
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- Can't be stored as a round object in GIS, so its technological instantiation in the 2017 Tiger/LINE shapefiles is a 4266-sided polygon





Pennsylvania as a precinct network

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- Same sentence: enslaved people count 3/5
- Problem of virtual representation lurks behind mechanics of counting - who counts for apportionment? who votes? whose interests are plausibly represented? (Fishkin)
- As recently as 2016, SCOTUS points to raw Census count as the default basis for redistricting (Evenwel v Abbott)

ANTECEDENTS IN LATE COLONIAL INDIA (B.R. AMBEDKAR)

First attempt of "a definite and deliberate kind" to count Untouchables was in the census of 1911, following a reform period when Muslims sought better representation.

Under these tests the Census Superintendents made a separate enumeration of castes and tribes who (1) denied the supremacy of the Brahmins, (2) did not receive the Mantra from Brahmana or other recognized Hindu Guru, (3) denied the authority of the Vedas, (4) did not worship the great Hindu Gods, (5) were not served by good Brahmanas, (6) have no Brahman priests at all, (7) have no access to the interior of the ordinary Hindu temple,

(8) cause pollution, (9) bury their dead and (10) eat beef and do not revere the cow.

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Hindu suspicion of caste enumeration: "its aim was to separate the Depressed Classes from the Hindus and thereby to reduce the strength of the Hindu Community"

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- Today multiple Census lawsuits are challenging a new OMB directive to ask respondents for their citizenship status

RULES REDUX

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- Districts equalize (Census) population, compact and contiguous, preserve counties-cities-communities, and provide opportunities for qualifying minorities to elect a candidate of choice... plus many more local rules

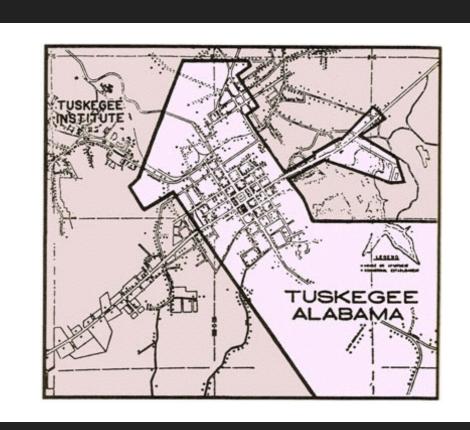
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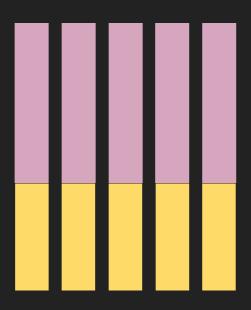
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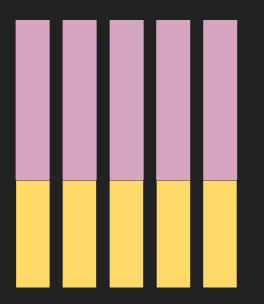
 In principle, equipopulous districts can be arranged so that a minority with V% of the votes receives anywhere from 0 to 2V% of the representation

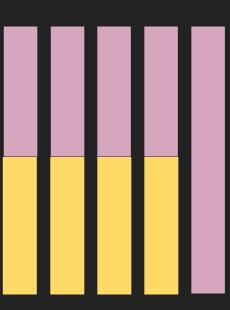
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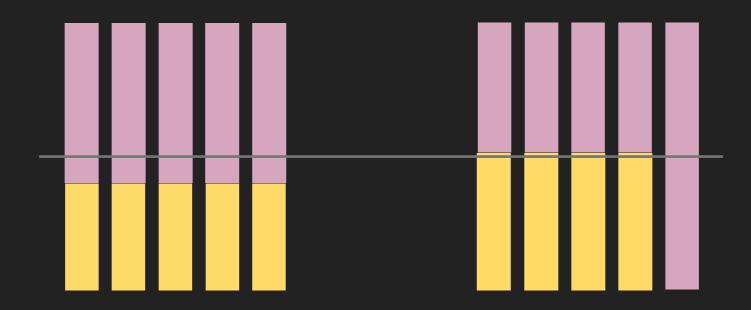


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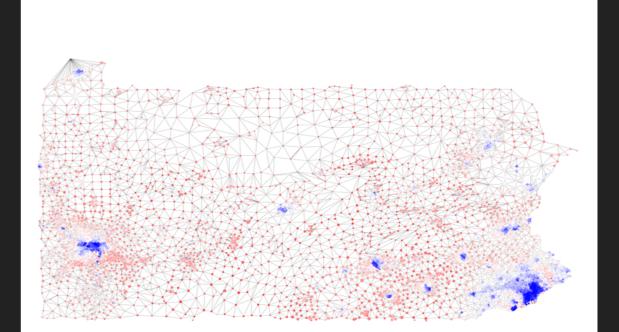


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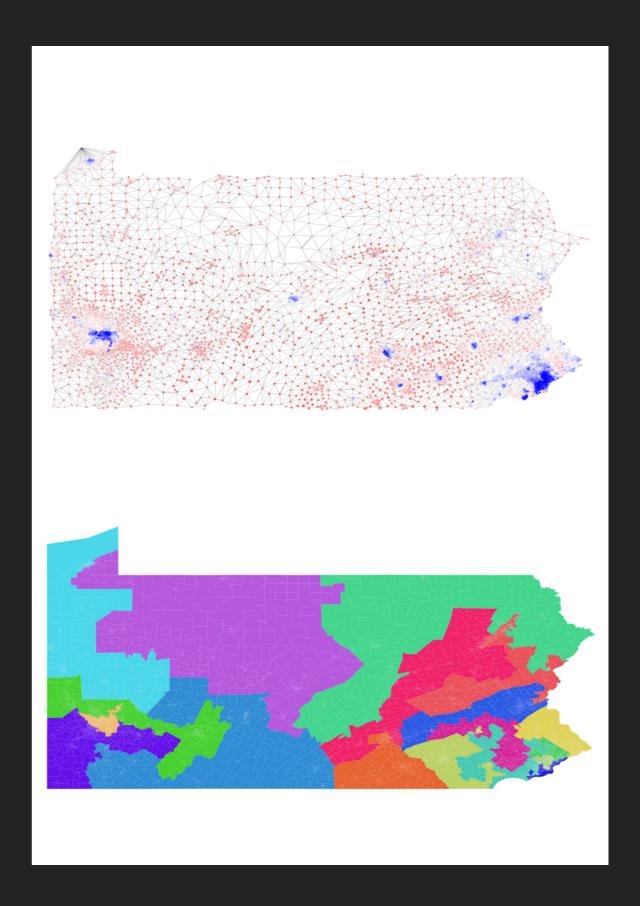


- Senate 2016 vote with the enacted plan would give Dems 49% of the vote, 22% of the seats
- Is this a gerrymander?

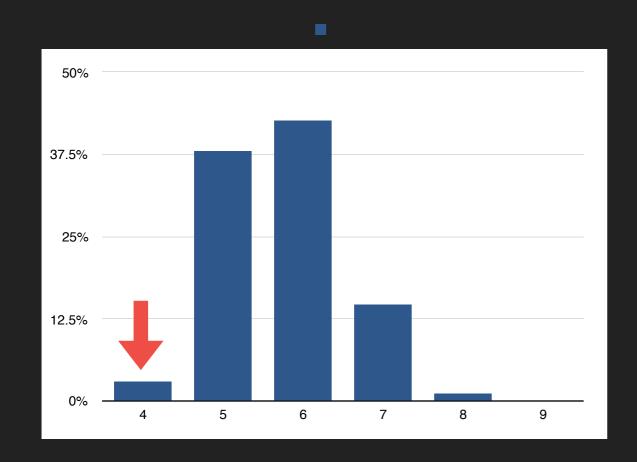
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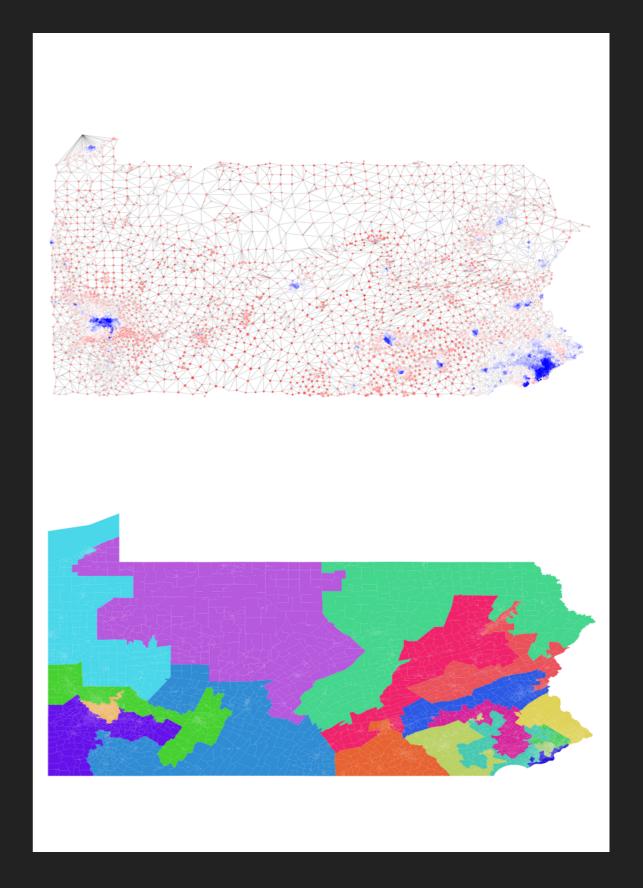


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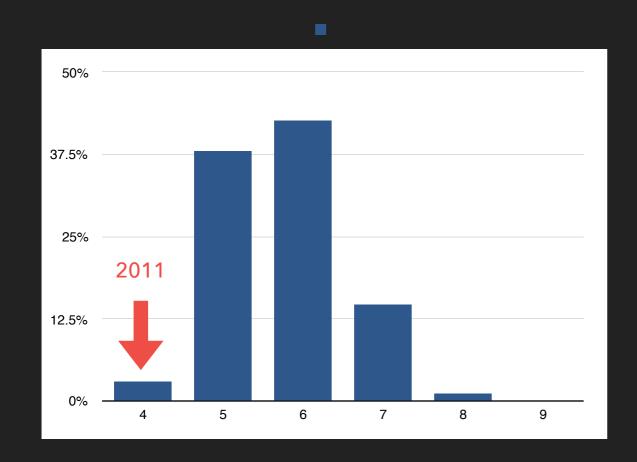


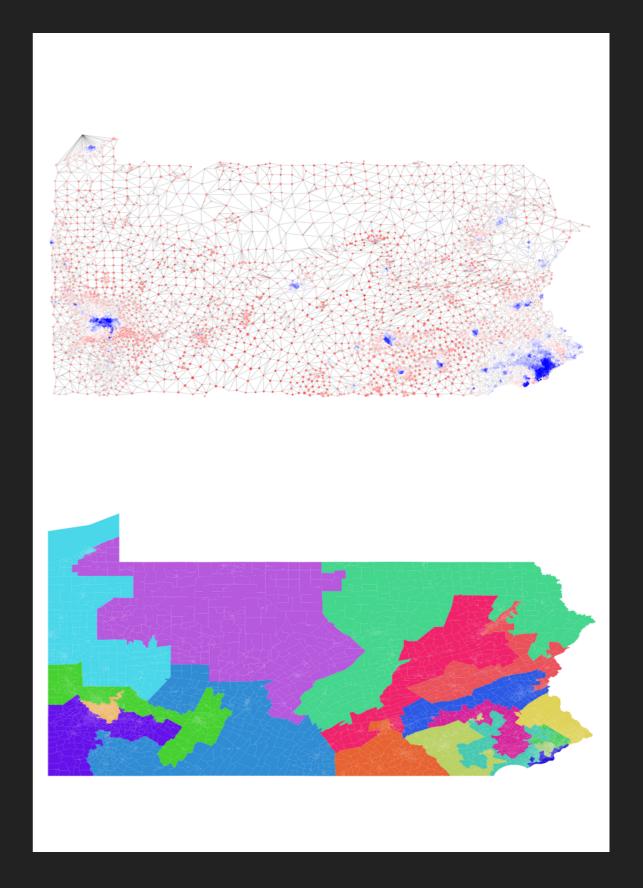
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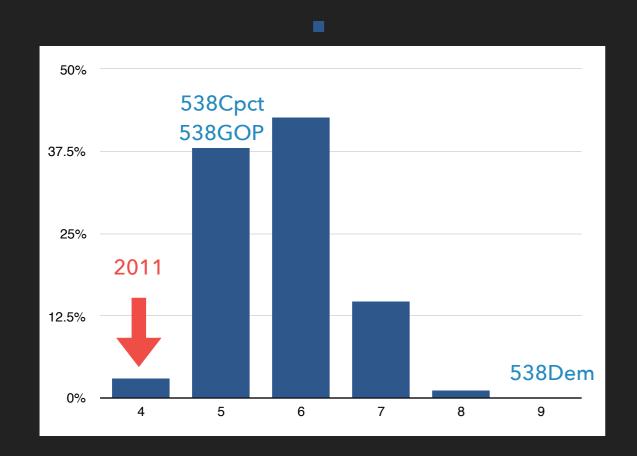


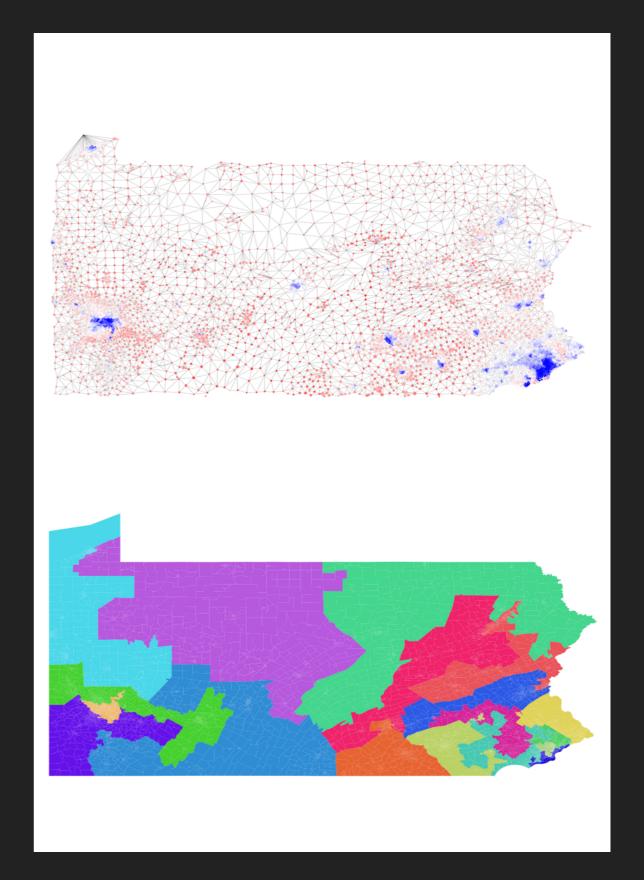
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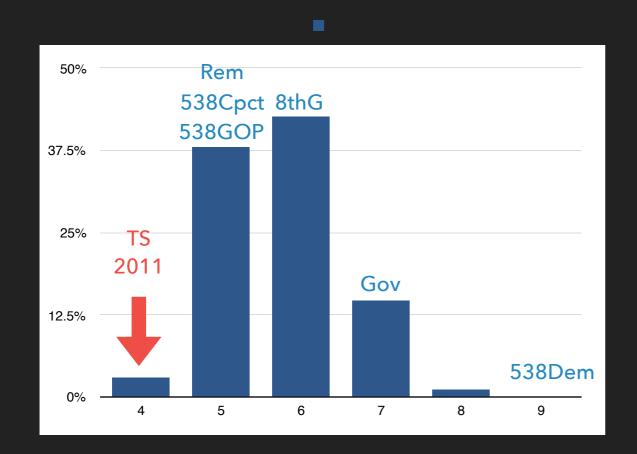


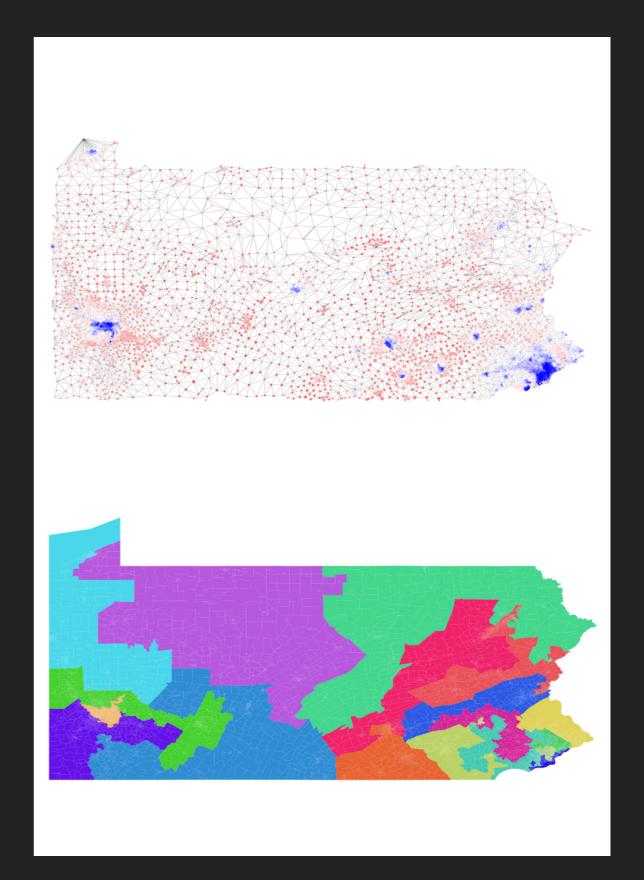
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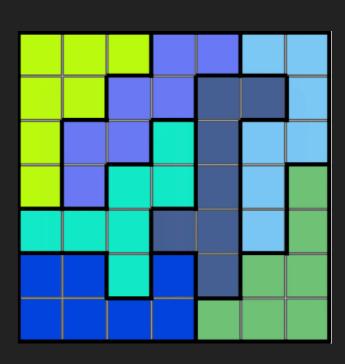




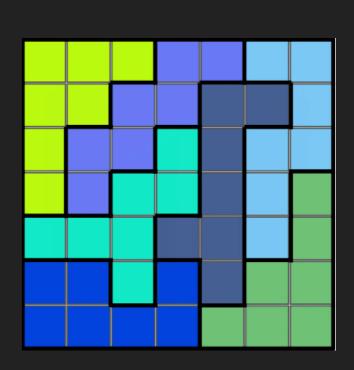
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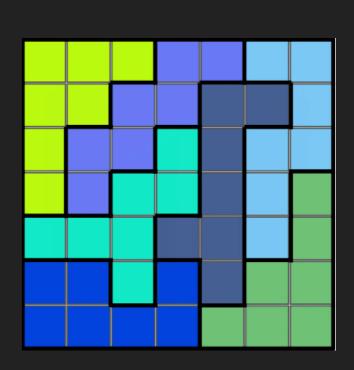




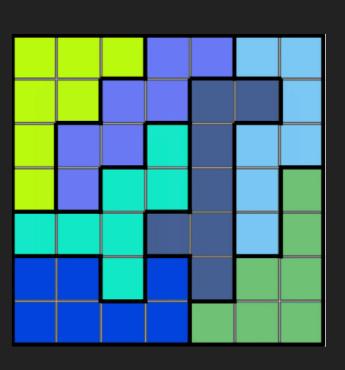
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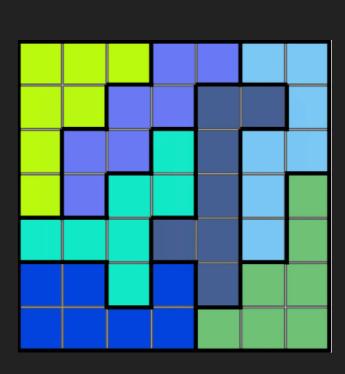
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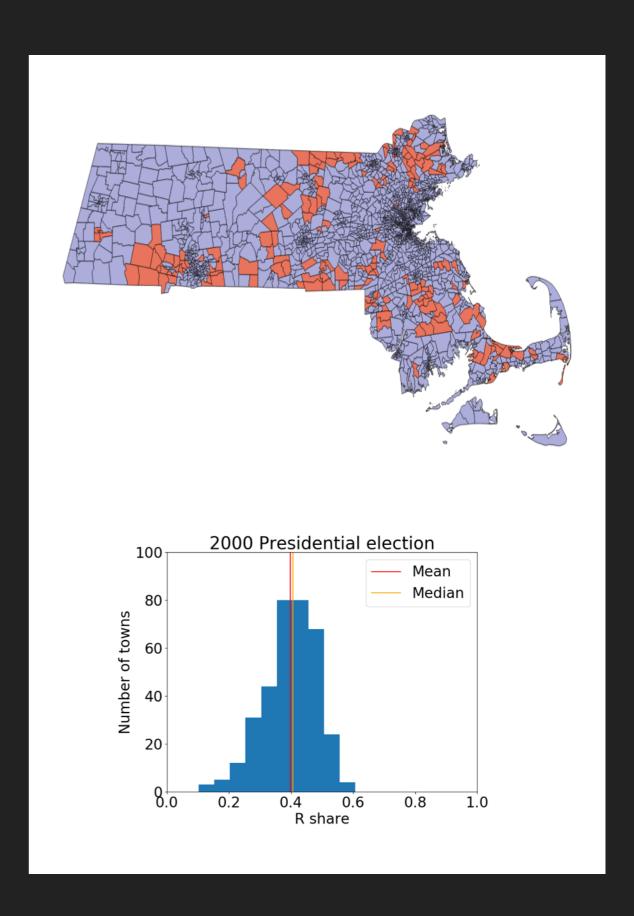
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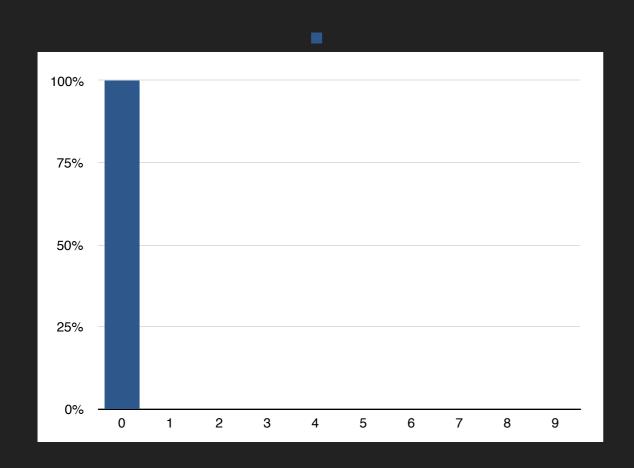
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- In the long-term, a suitable MCMC is guaranteed to converge to a steady state

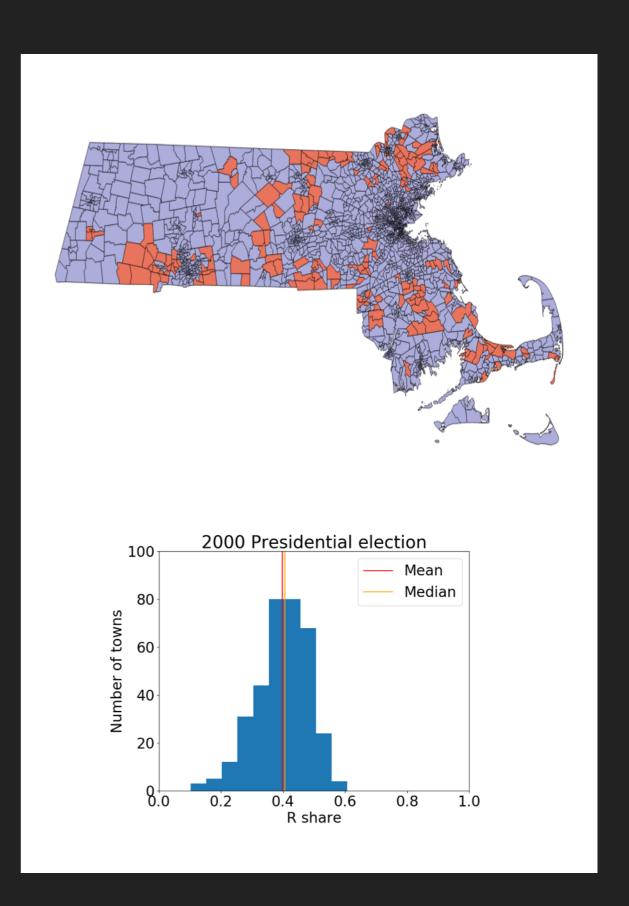


- 35% of the vote, 0% of the seats –true for 20+ years running
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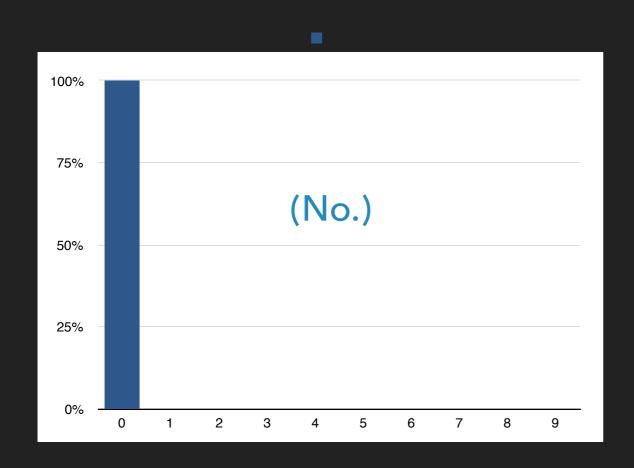


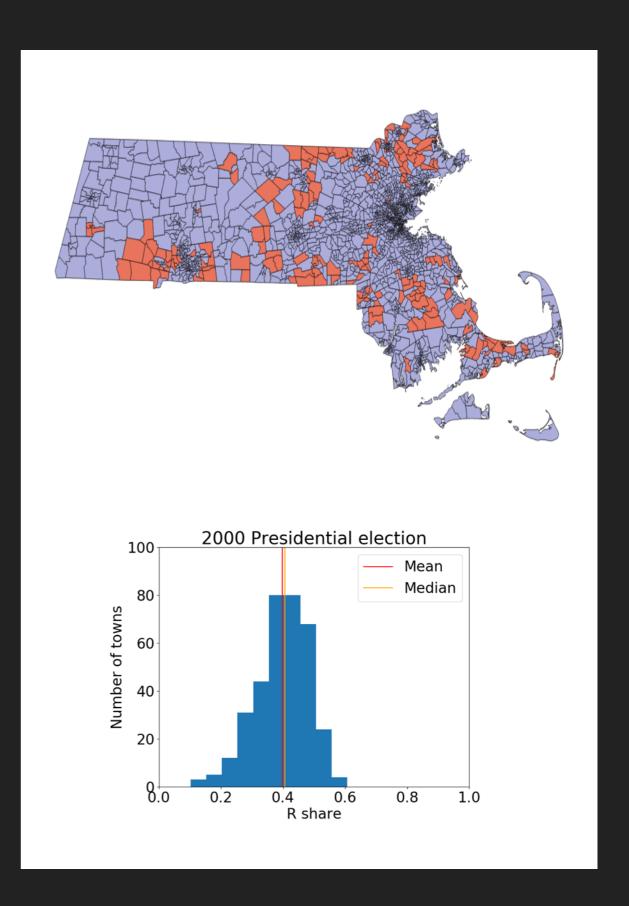
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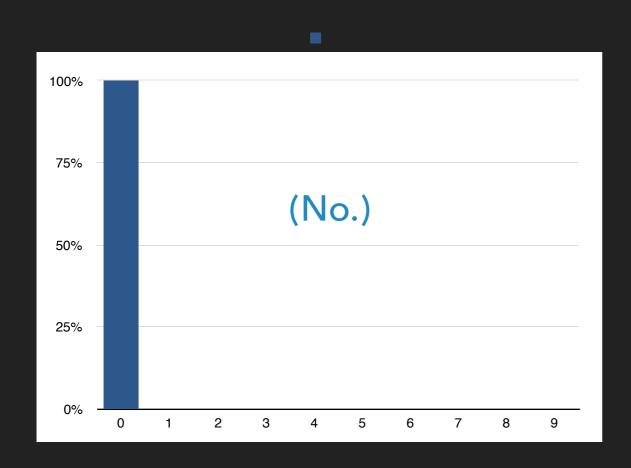


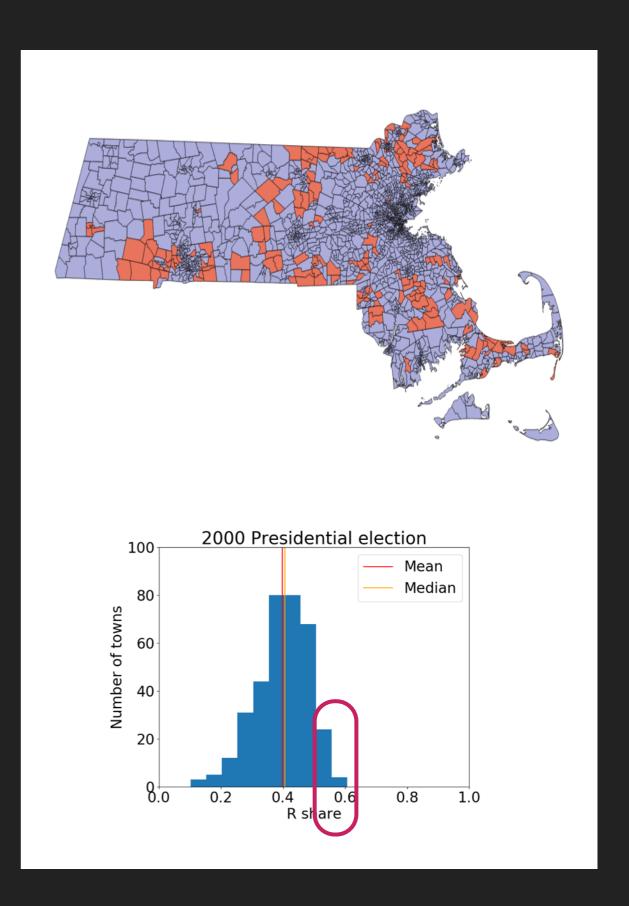
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Case study for "algorithmic governance"

not to automate, optimize, simulate, or predict but to verify that a policy comports with its design principles

