

Redistricting and the Voting Rights Act

**Workshop on 2020 Census Data Products:
Data Needs and Privacy Considerations**

December 11, 2019

Five electoral use cases impacted by differential privacy

Redistricting: equal population

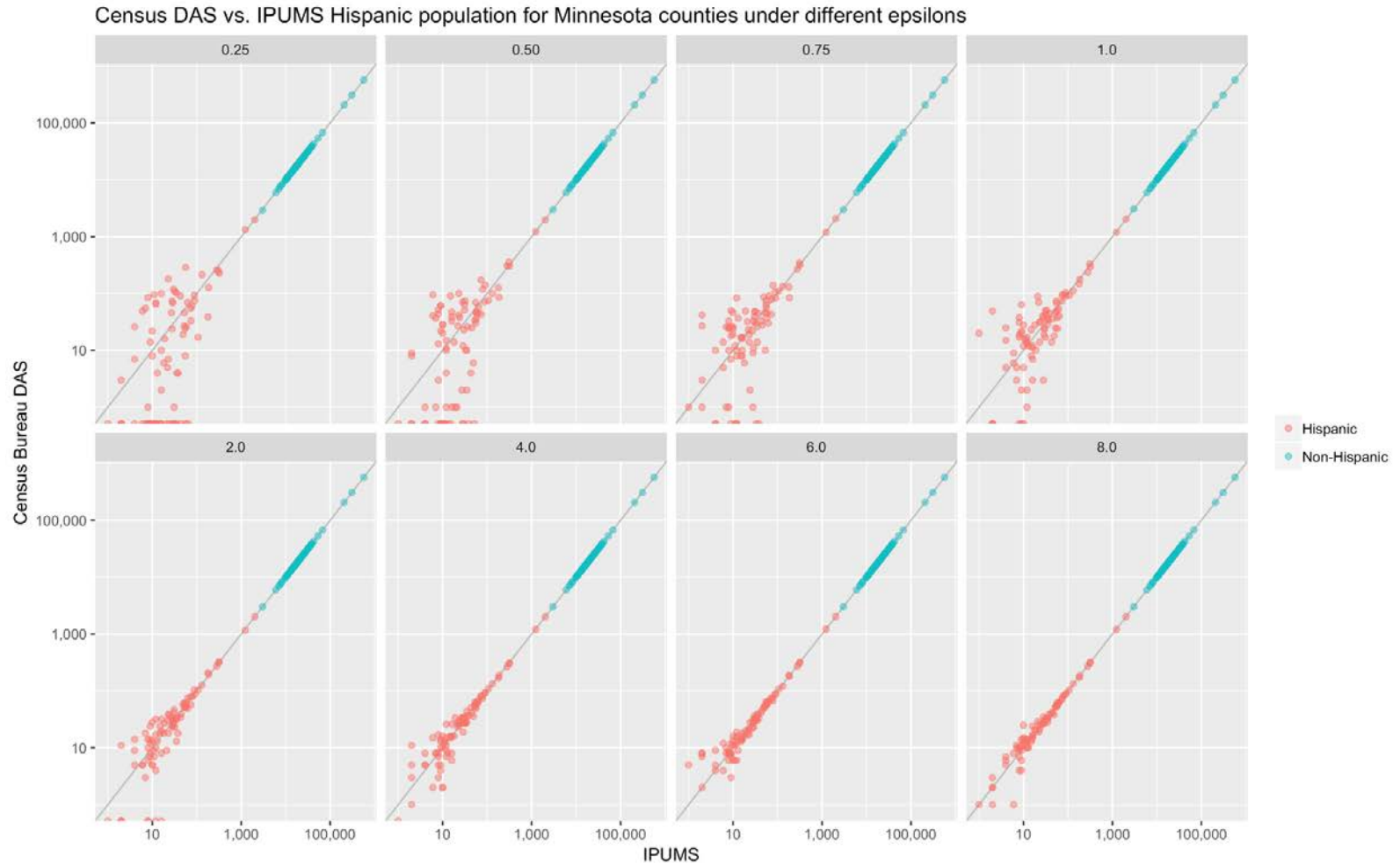
Redistricting: Voting Rights Act population size

Redistricting: Voting Rights Act racial polarization

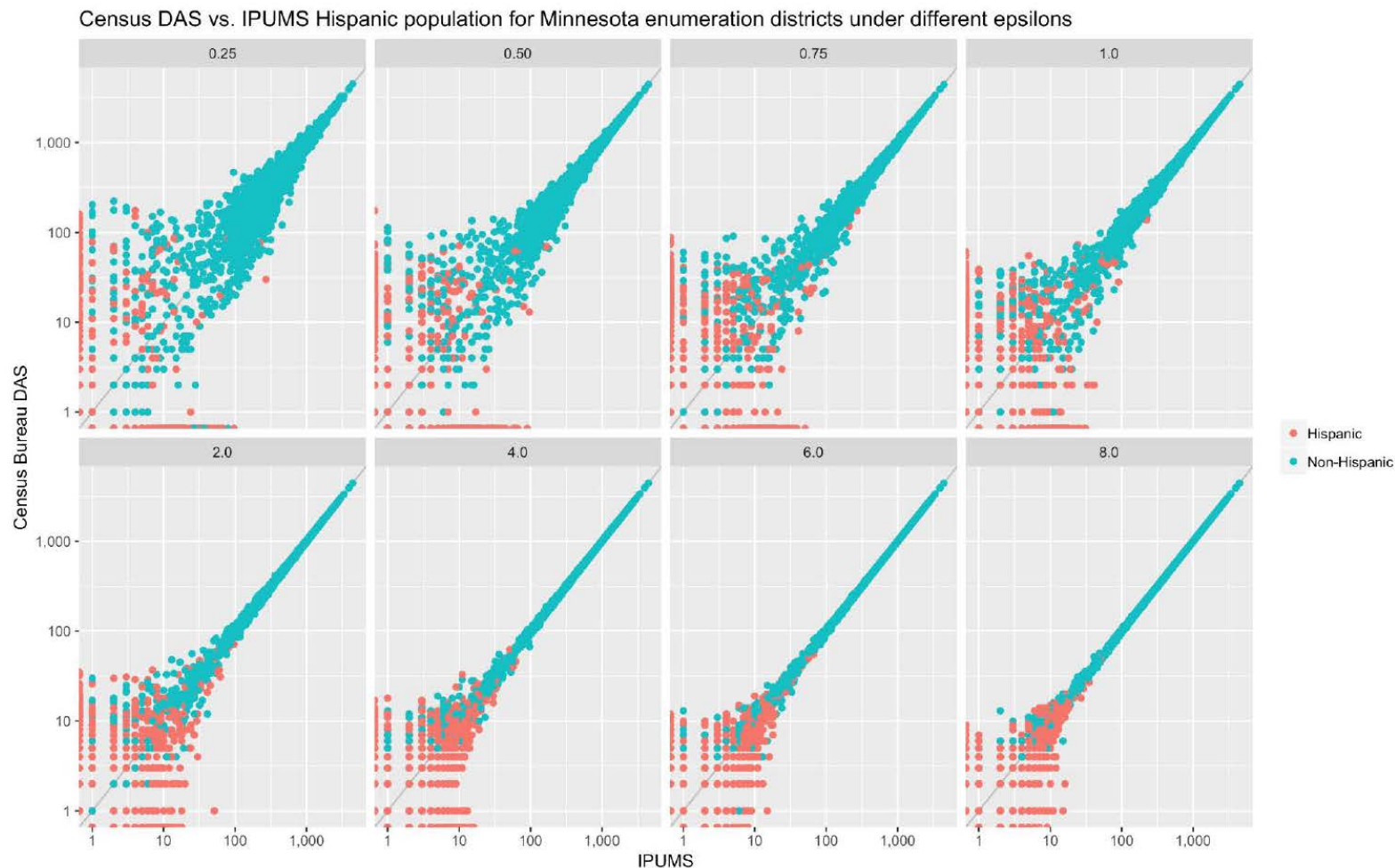
Voting Rights Act: language access

Other (e.g., precinct language assistance)

Utility depends on epsilon



Utility depends on epsilon (and pop. size)



Demonstration products: $\epsilon = 6.0$

$\epsilon = 4.0$ for population tables

- Is this likely to be the epsilon for 2020?
- Will some of this be used for block-level citizenship data?
- Will some of this be used for later-released products?

Summary File 2 ethnicity detail
American Community Survey
Others

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Use 1: equal representation

Every legislative district must be about the same “size”

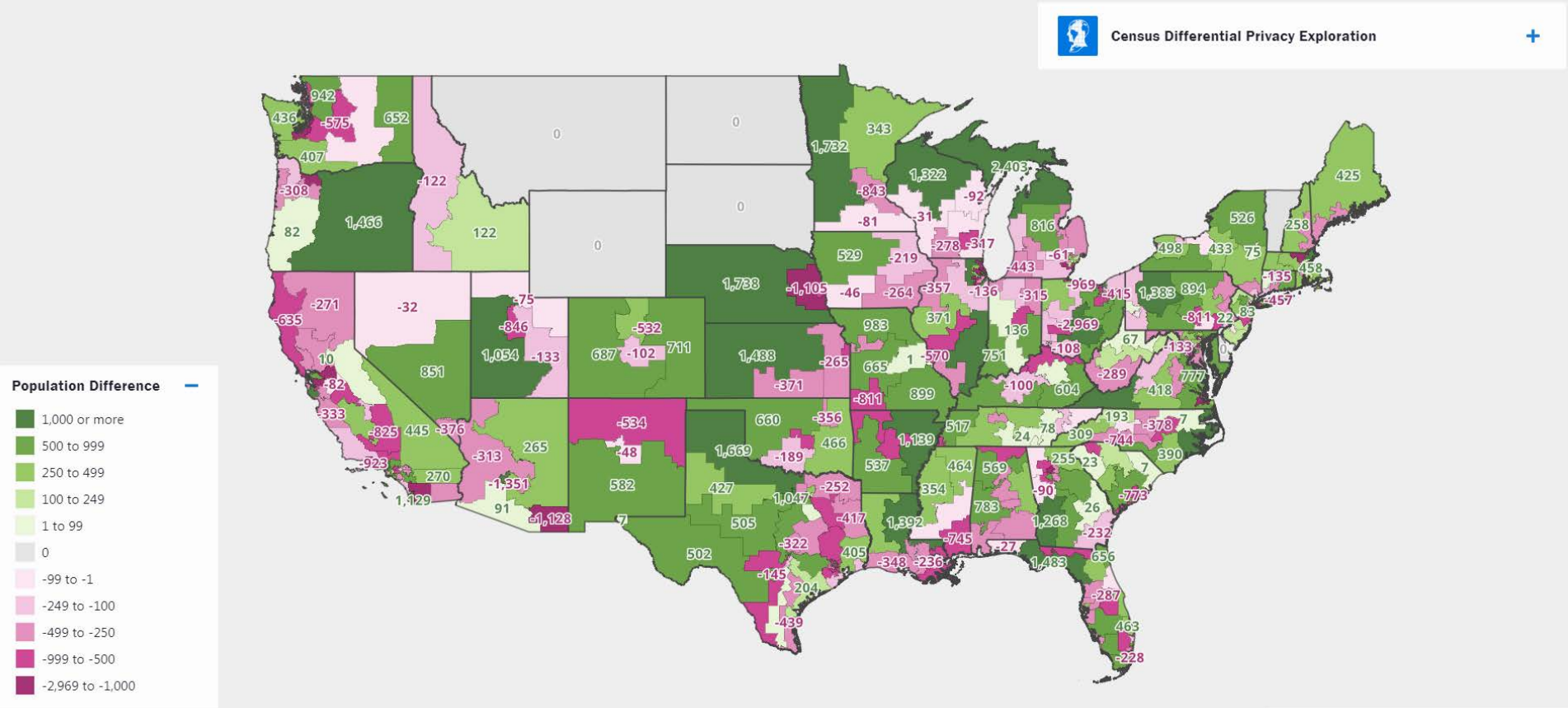
- Congressional district ~~± 1 deviation~~
 - State legislative district 10% total deviation
 - Local government district 10% total deviation
- Plus
(sometimes)
state law



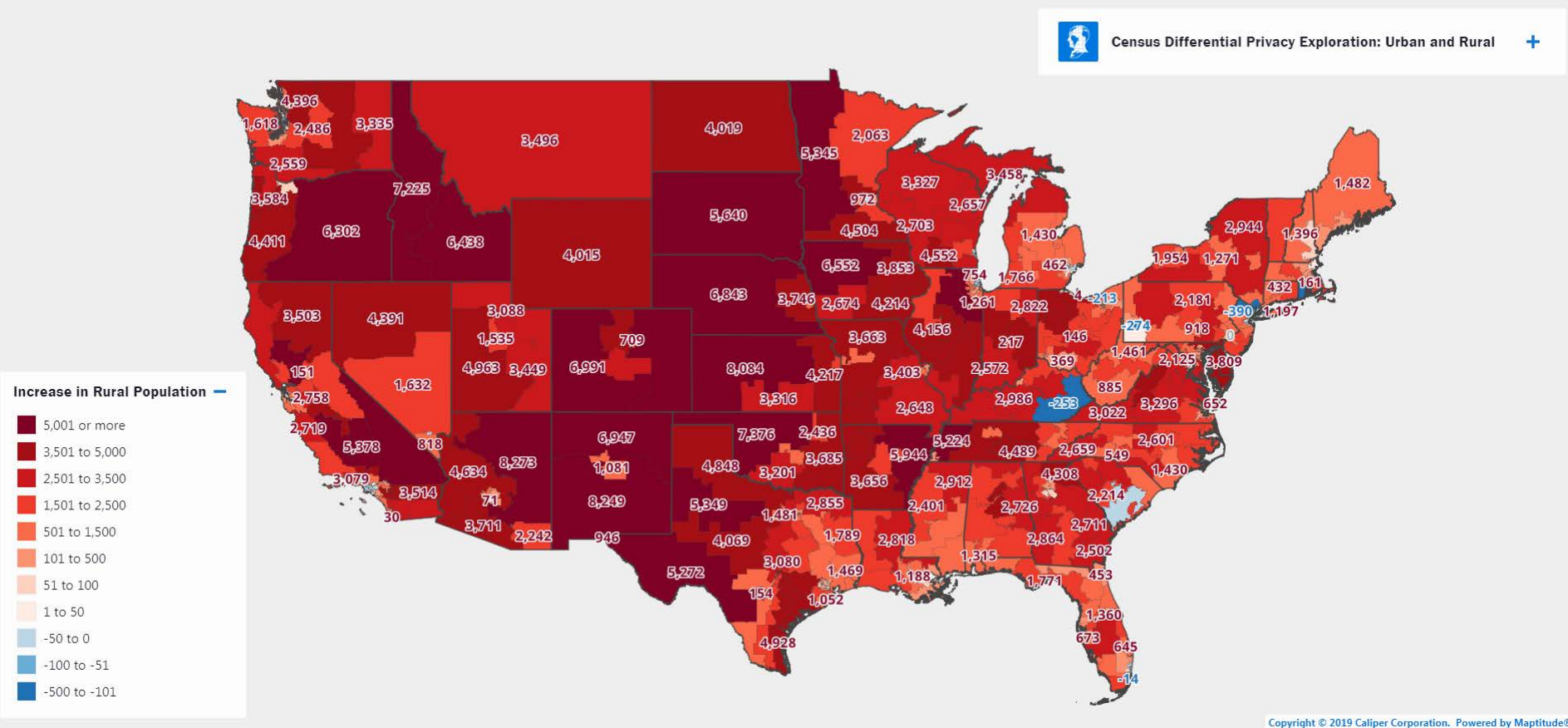
Deviations justified if “necessary to achieve some legitimate [gov’t] objective”

Tennant v. Jefferson Cnty. Comm’n, 567 U.S. 758 (2012)
Brown v. Thomson, 462 U.S. 835 (1983)

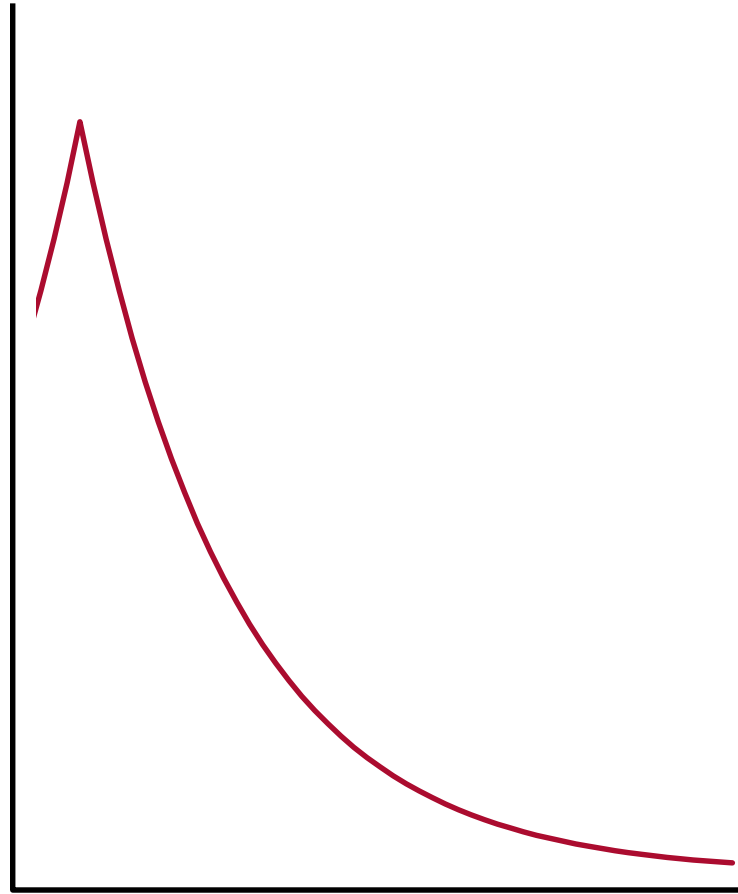
Congressional deviations likely minor



But may still represent systematic bias



Editing to avoid zero/negative counts



Use 1: equal representation

DEPENDING ON ϵ :

Minor differential privacy noise unlikely to create “equal representation” legal jeopardy for larger districts

But could still reflect systemic bias toward rural populations

And at substantial levels could create skew in smaller districts

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Use 2: Voting Rights Act

Under certain conditions, jurisdictions may have an affirmative responsibility to design districts so that they provide equitable electoral opportunity based on race or language minority status.

Threshold liability determinations (*Thornburg v. Gingles*, 478 U.S. 30 (1986))

- Minority group of sufficient size and concentration
- Racially polarized voting
- Preferred candidates of minority usually lose

Plus historical / sociolegal discrimination

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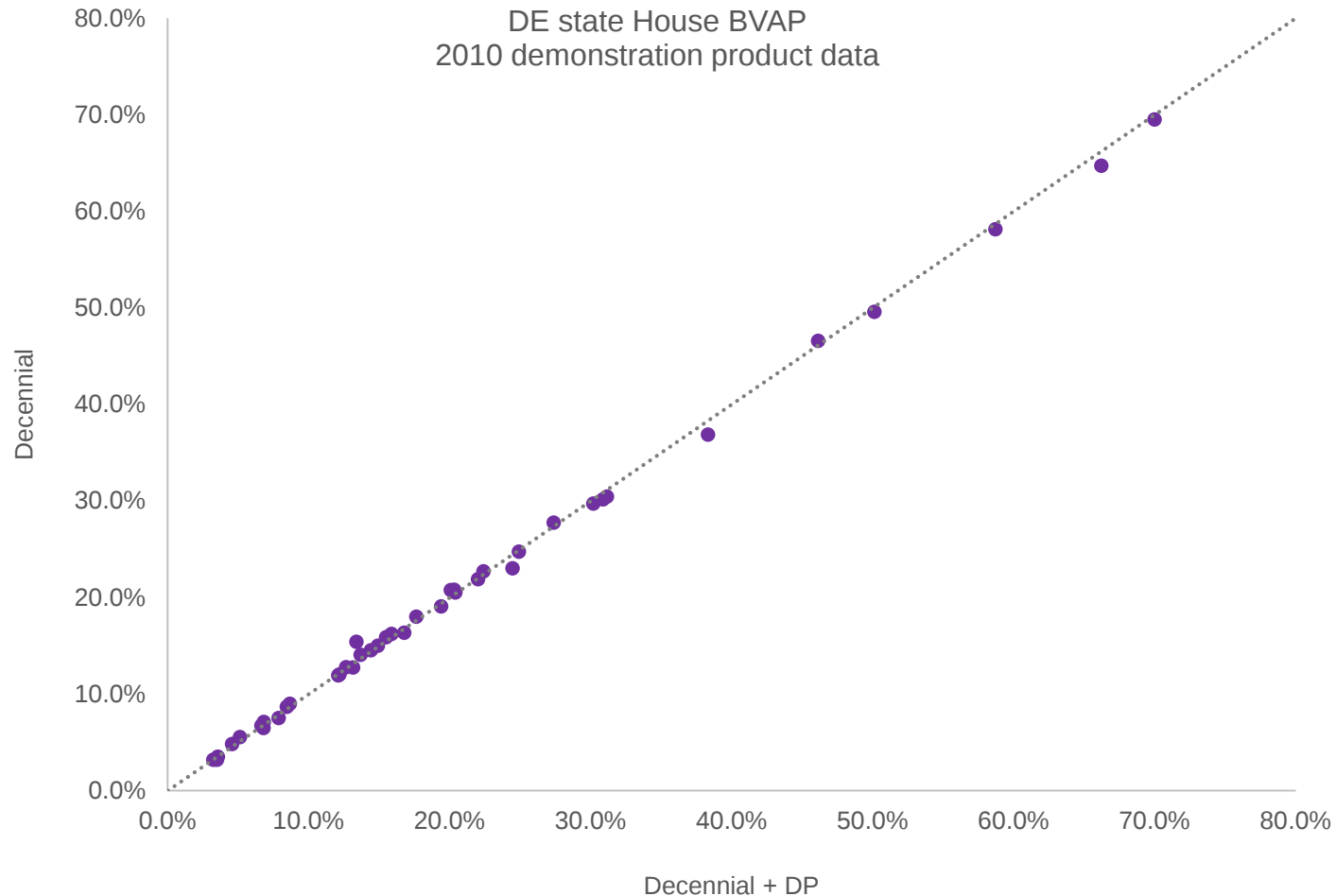
Plus historical / sociolegal discrimination

Use 2: VRA, electorate size

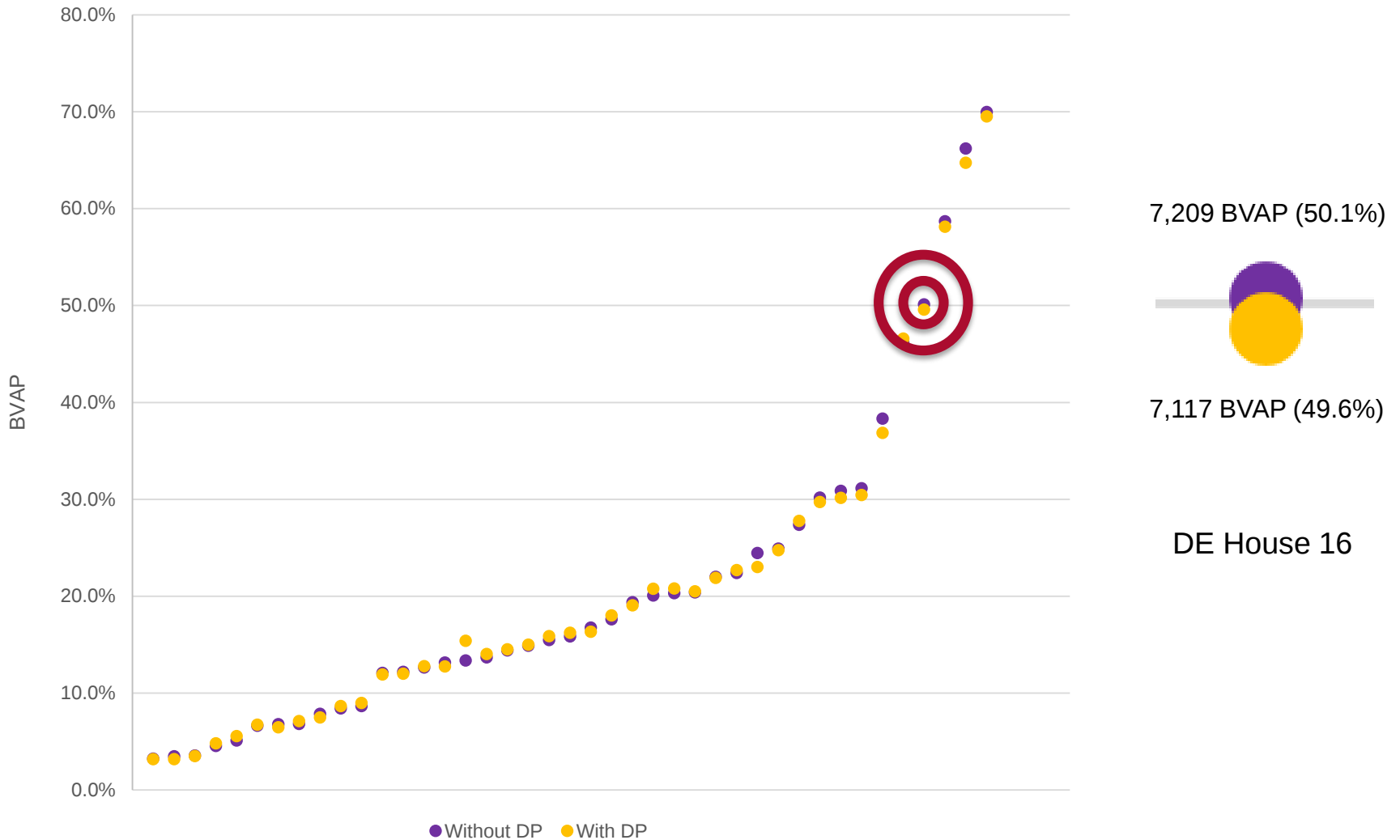
Minority group of sufficient size/concentration

(C)VAP > 50% of district-sized area *(Bartlett v. Strickland, 556 U.S. 1 (2009))*

Good news: not much variation even for minorities in DE state House



Bad news: the 50% threshold matters



Use 2: VRA, electorate size

DEPENDING ON ε :

Variation in district size, demonstrative district options relieve some pressure on 50% threshold

But could still cause problems for smaller districts at threshold or when multiple districts abut

And losses don't just come out in the wash: possibility of "false positive" doesn't help an electorate too small to exercise its power

... but more than ACS, for jurisdictions using CVAP?

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Use 3: Voting Rights Act

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Threshold liability determinations (*Thornburg v. Gingles*, 478 U.S. 30 (1986))

- Minority group of sufficient size and concentration
- **Racially polarized voting**
- Preferred candidates of minority usually lose

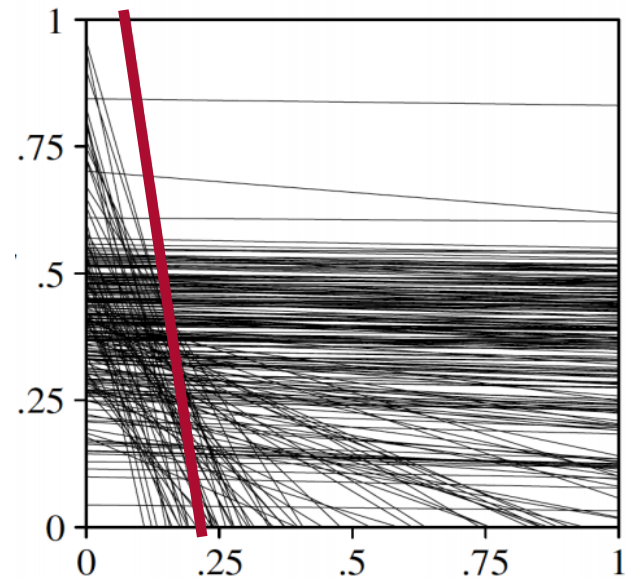
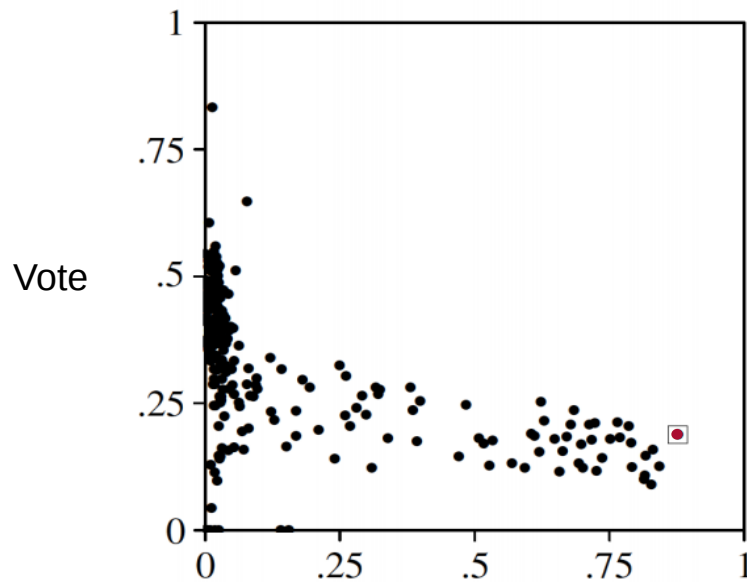
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Use 3: VRA, polarization

Racially polarized voting

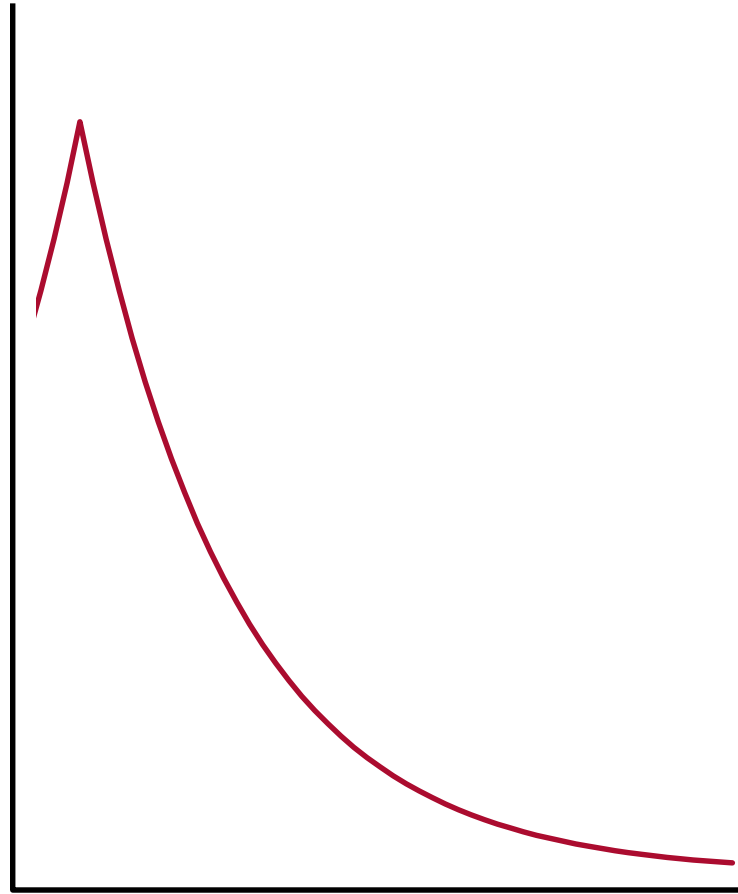
(*Thornburg v. Gingles*, 478 U.S. 30 (1986))

Do minority communities favor different candidates than majority communities most of the time?



Electorate composition

Editing to avoid zero/negative counts



Use 3: VRA, polarization

Utilizes smallest geographies: precinct, not city, county, leg. district

DEPENDING ON ϵ :

Where race/ethnicity doesn't come directly from the voter file, differential privacy adding noise to polarized voting patterns may reduce apparent polarization

Particularly when predictive power stretched by

- multiple minorities, high integration
- limited turnout, multimember elections

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Use 4: VRA language determinations

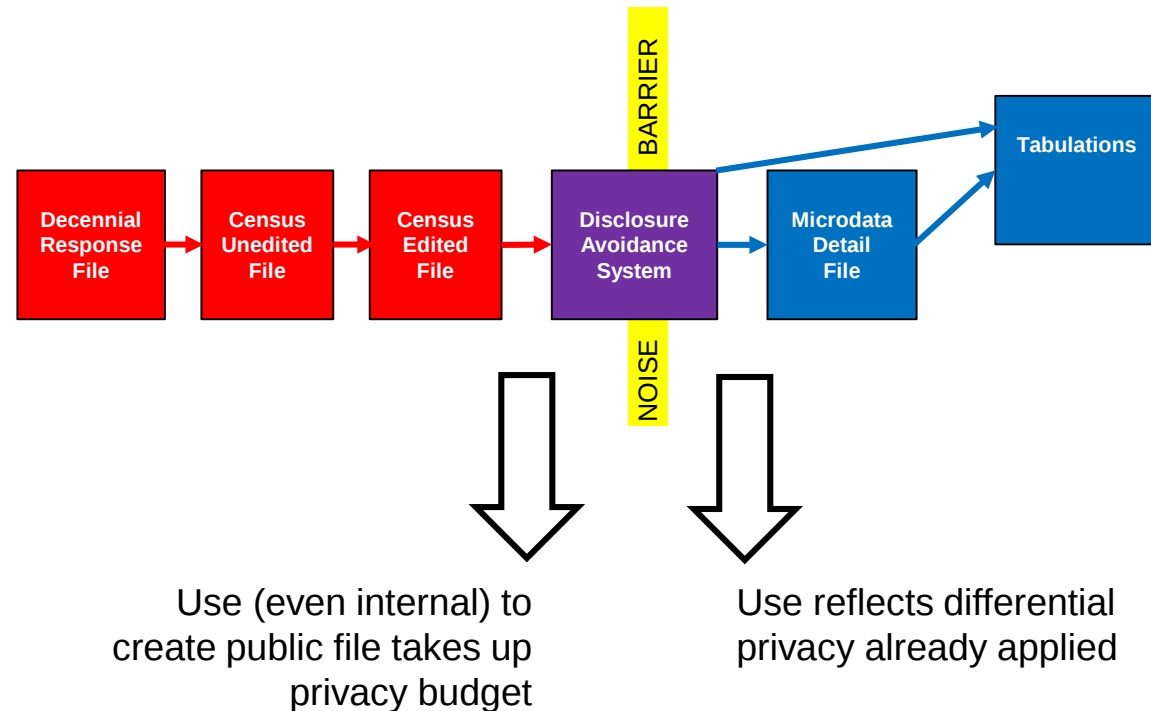
Based largely on the American Community Survey

- 5% CVAP in language group, limited English-proficient
- 10,000 CVAP in language group, limited English-proficient
- Education < 5th grade higher than national average

ACS either affects or affected by differential privacy

- Decennial sets ACS frame
- Decennial helps refine section 203 precision

Which decennial?



Use 4: VRA, language

DEPENDING ON ϵ :

Differential privacy may expand imprecision of ACS, particularly for smaller language-minority groups in smaller jurisdictions

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Use 5: Other

Asian American Ethnic Groups	2000			2010			% Growth 2000 to 2010
	Number	% of Ethnic Group	% of AA 65+	Number	% of Ethnic Group	% of AA 65+	
Chinese (except Taiwanese)	36,589	11%	29%	51,888	13%	28%	42%
Filipino	28,547	10%	23%	43,854	12%	23%	54%
Korean	17,829	9%	14%	31,221	14%	17%	75%
Japanese	24,648	18%	20%	26,309	19%	14%	7%
Vietnamese	5,807	7%	5%	9,719	9%	5%	67%
Indian	3,993	6%	3%	7,498	8%	4%	88%
Taiwanese	3,293	8%	3%	5,857	13%	3%	78%
Thai	925	4%	1%	2,654	9%	1%	187%
Cambodian	1,534	5%	1%	2,601	7%	1%	70%
Indonesian	685	6%	1%	1,138	9%	1%	66%
Pakistani	280	4%	0.2%	663	6%	0.4%	137%
Burmese	NR	NR	NR	621	12%	0.3%	NR
Sri Lankan	265	7%	0.2%	564	10%	0.3%	113%
Laotian	170	5%	0.1%	258	6%	0.1%	52%
Bangladeshi	54	2%	0.04%	244	5%	0.1%	352%
Malaysian	86	6%	0.1%	101	7%	0.1%	17%
Mongolian	NR	NR	NR	58	4%	0.03%	NR
Okinawan	NR	NR	NR	42	12%	0.02%	NR
Nepalese	NR	NR	NR	30	2%	0.02%	NR
Singaporean	NR	NR	NR	15	4%	0.01%	NR
Hmong	10	1%	0.01%	13	2%	0.01%	30%
Asian American Total	125,039	10%	100%	187,483	13%	100%	50%

U.S. Census Bureau, 2000 Census SF2, Table PCT3; 2010 Census SF2, Table PCT3.
NR = No report. Ethnic group did not meet 2000 Census population threshold for reporting.

Use 5: Other

Microdetail on language minorities helps election officials plan precinct resources

DEPENDING ON ϵ :

It's uncertain how impact on privacy-loss budget may expand data suppression of smaller language-minority groups in smaller jurisdictions in files like Summary File 2

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