The Psychology of Mapping Census Data

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Today’s Lesson

- Mapping Types
- Quantitative Approaches
- Classification Types
- Effective Use of Color
- Census Geographies
- Demonstration of Census Mapping
Qualitative or Quantitative?

**Qualitative:**
- Nominal Data
- No Focus on Quantities

Source: data.census.gov
Source: www.nationsonline.org

United States Census Bureau
Qualitative or Quantitative?

**Quantitative:**
- Shows Magnitude
- Variation of Numerical Data
- Statistics
- Rates better than numbers

Source: data.census.gov
What is a choropleth map?

Thematic map.

Administration or Statistical Areas.

Color as symbol that represents stats/numbers/interest.

Source: www.census.gov
In the good ole’ days... variables were visualized differently.

Figure 4.4 Here, we map the same data variable with two different visual variables. Which variable do you think is more effective for showing varying intensities of motor vehicle accident mortality?

Source: https://www.e-education.psu.edu/geog486/
What will you map?
Percentage? Rate? Number?

It will change the look of your map.

Figure 4.cg.5 The map at the left shows the count of motor vehicle deaths by county in California. As we would expect, the larger numbers of deaths occur in the more populous counties of the Los Angeles, San Francisco and San Diego metropolitan areas. The map of rates at the right shows a very different picture of risk of dying in a motor vehicle accident: the highest rates are in non-metropolitan California.

Source: https://www.e-education.psu.edu/geog486/
....it will affect the look of the map.

Source: http://gisgeography.com/choropleth-maps-data-classification/
How Many Data Classes?

It will have impact on the map reader.

Figure 4.1g.8 In the four-class map at the left, it should be quite easy to decide which observations are in the same class. Take a look at the six- and eleven-class maps and see if you can do the same. You will probably succeed in the six-class map (middle), but have difficulty with the eleven-class map. Although you should be able to tell if one county is lighter or darker than another in the eleven-class map in a pairwise comparison, it will probably be difficult to pick out all observations that fall in a given class.

https://www.e-education.psu.edu/geog486/node/1865
Mapping Classifications

“Equal Interval”

Equal-sized subrange

Easy Interpretation

Clustered Values=Many Features in 1 Class

Percent Population Under 5

- 3% - 6%
- 6% - 9%
- 9% - 12%
- 12% - 15%
- 15% - 18%

<- Histogram
Mapping Classifications “Quantiles”

Equal number of features per class.

Stresses relative position.

Similar values may end up in different classes.
Mapping Classifications
“Natural Breaks”

Classes based on natural groupings

Good for mapping dispersed values.

Difficult to compare maps for different datasets.
Making a Choropleth Map Effective

One variable at a time.

Use relative data.

Use right color scheme.

Make it intuitive.

Source: [www.census.gov](http://www.census.gov); [www.datawrapper.de](http://www.datawrapper.de)
Census Geographies in a Nutshell

Other Geographies:
-ZCTA; Place; MCD; Congressional District; School District, PUMAs
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SOURCES:
https://gisgeography.com/
www.datawrapper.de
www.census.gov
www.nationsonline.org
https://www.e-education.psu.edu/geog486/welcome
https://colorbrewer2.org/
https://www.esri.com/about/newsroom/arcuser/
**DATA SETS USED - LINKS**

*(Percent) Population, 65 – 74 years – By County, New York State*

https://data.census.gov/cedsci/map?g=0400000US36%240500000&y=2020&d=ACS%205-Year%20Estimates%20Data%20Profiles&tid=ACSDP5Y2020.DP05&mode=thematic&loc=42.8470,-76.5836,z5.7096&vintage=2020&layer=VT_2020_050_00_PY_D1&cid=DP05_0015PE

*Medium Household Income – By County, New York and New Jersey States*

https://data.census.gov/cedsci/map?g=0400000US34%240500000,36%240500000&y=2020&d=ACS%205-Year%20Estimates%20Data%20Profiles&tid=ACSDP5Y2020.DP03&cid=DP03_0062E&vintage=2020&layer=VT_2020_050_00_PY_D1&mode=thematic&loc=42.0321,-75.0382,z5.2812&classification=Quantile&palette=Oranges

*Housing Units Built Before 1939 – By Tract, Essex Co., NJ*