

Critique

[The census proves the US is diversifying. Here's how – in five charts](#)

Supporting the Visualization's Goal

The main goal of the visualization is to indicate the increase of diversity in the U.S. between 2010-2020. Using insight-based evaluation, I find that the visual representation supports this goal effectively, because it provides deep, qualitative, and relevant insight at a quick glance. Viewers can easily glean a few patterns from looking at the map and identify the overall increase in diversity, as well as noting the areas where diversity decreased, enabling them to learn complex and unexpected patterns.

Effectiveness of Visual Encodings

Using a sequential color scheme for all increasing values, with a contrasting color for where minority populations decreased, is a very effective visual encoding. However, the colors are very difficult to distinguish for certain forms of colorblindness, so I would change the brightness or saturation of the contrasting color to be more accessible to all viewers.

Using a map is a good choice of encoding, because we can easily see geographical patterns, which are important to drawing insights from the data. However, using a map requires the viewer to have some expertise and be able to recognize certain places in order to draw insights. It's easy to spot patterns on the map, but it's not necessarily easy to understand what the patterns mean, if you're not familiar with U.S. geography.

Using the height of peak icons to represent the magnitude and direction of change is effective in areas where the data is more sparse, but in denser areas there is a bit of overplotting, and it's difficult to see the trends and individual outliers.

It would help generate insights if they showed actual minority populations in addition to the change in minority populations. Currently, there's no difference between a change from 0% to 5% and a change from 40% to 45%.

Finally, the time frame is an important piece of context for drawing insight from the visualization, but the years are included in smaller text in the subtitle. The time period should be included in the main title, so viewers don't have to hunt for important contextual information.

Effectiveness of Interaction Design

I think the interaction design is not totally intuitive, because there are paragraphs between each plot and there is no indication that you are supposed to keep scrolling to access the next plot. I think it would be much more effective to be able to see these maps side by side, or at least toggle between them on the same screen to draw more conclusive comparisons.

Memorability

The visualization currently relies too much on the viewer's memory when making comparisons between the different plots, because the viewer must scroll between the plots and memorize certain data to create insights. For example, if a viewer wanted to examine the difference between the change in Hispanic population and the change in Asian population, they would have to scroll back and forth, and they are likely to make some error in inference when relying on memory.

Potential for Misinterpretation

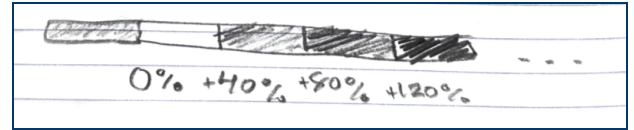
One possible misinterpretation that could come from this vis is conflating the % change in minority populations to be equivalent to total % minority populations. From this vis, a viewer might mistakenly conclude that the highest, darkest peaks represent the highest populations.

Additionally, there is potential for misinterpretation in comparing the plots, because some of them represent % change, and some of them represent the actual changes. It's misleading to use a relative metric for one chart and an absolute metric for another, because the encodings are the same, but the scales and meanings are completely different. This is indicated by the legends, but viewers could easily miss the legend and assume the units are the same.

Redesign

Change color palette to be more accessible

- Current color palette makes it very difficult to distinguish the leftmost color (representing negative values) for certain forms of colorblindness.
- Change the brightness/saturation of the leftmost color to be different from the brightness/saturation of the other colors.



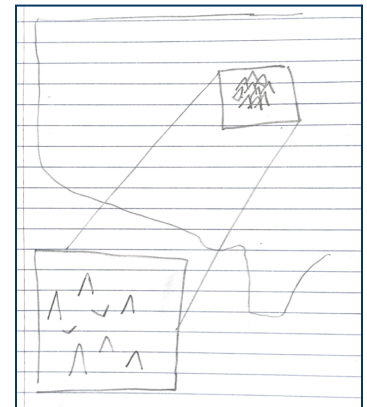
Add time period context to main title

- Important contextual details should be difficult to miss. Include the year range in the main title to make the time frame more obvious.

How much the racial minority population increased in each county from 2010 - 2020

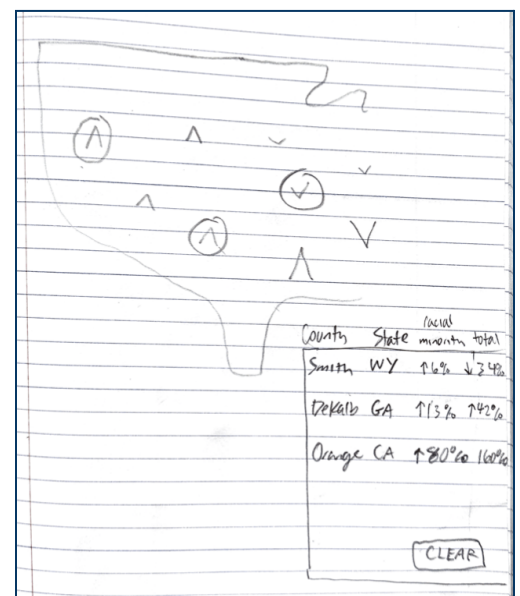
Add zoom in

- Icons maintain small size, but distance between them increases with zoom in to enable finer comparisons in dense areas.



Add details on demand and multi-select comparison tool

- Currently, the visualization requires viewers to have knowledge of U.S. geography and there's no way to get location details, or view exact numbers.
- When a user clicks on a county, it becomes selected
 - The county gets highlighted on the map
 - Details about the county (county name, state, population change statistics) appear in a table view on the right
- The table includes a "clear" button which viewers can use to clear selections. They can also click on individual rows to deselect them.
- Along with the zoom feature, this feature will make it much easier to make specific comparisons and generate more insight than the existing overview alone.



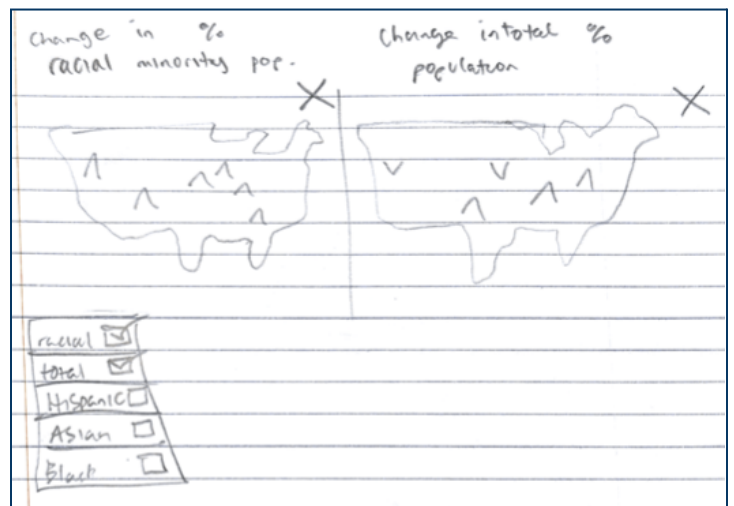
Replace scroll view with selection panel

- Currently, the plots are arranged vertically, and you have to scroll between them. This makes comparisons between the plots very difficult.
- Replacing the scroll view with a selection panel, as shown here, will make comparisons much easier, because the viewer can see the different plots in one place. This enables less memorizing.



Multi-map view

- To decrease the dependence on memory even more, viewers can select multiple maps from the selection panel.
- On selecting a second map, the visualization will enter a 2-map view
- Viewers can examine different attributes like racial minority population and total population side by side, instead of clicking back and forth and requiring the viewer to memorize certain data



Change maps to use same metric

- To prevent misinterpretation, the maps should all use the same kind of metric.
- Currently, some plots use relative metrics like % change, and some use total change.
 - Using the same encoding (color) for different scales is misleading.
- For easier comparisons and avoiding misinterpretation, all plots should use % change instead of total change.