Exercise 3 Report: Number of Medals Gained by Top Three Olympics Winners

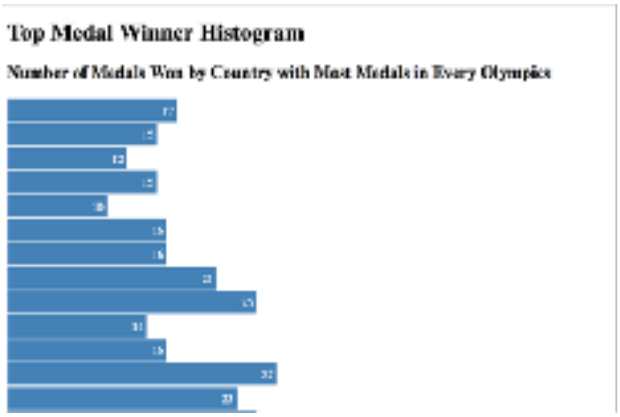
Paul de Fusco
DSE241
Cohort 3
1/27/2018

Outline:
The goal of this report is to showcase the number of medals won by the country that won the most medals during each session of the Winter Olympics.

Tasks Performed:
The tasks performed include:

- Re executed the original data visualization in Tableau and added new features including information, color, legend, axis, tick marks.
- Following task #1 in the instructions, loaded color maps from Color Brewer by replacing the preferences.tps file in the Tableau repository and used different combinations of them to test changes.
- Following task #2 in the instructions, used the original visualization to test for Protanopia (red color), Tritanopia (blue color) and Deuteranopia blindness at the website: http://www.rehue.net/

Discussion:

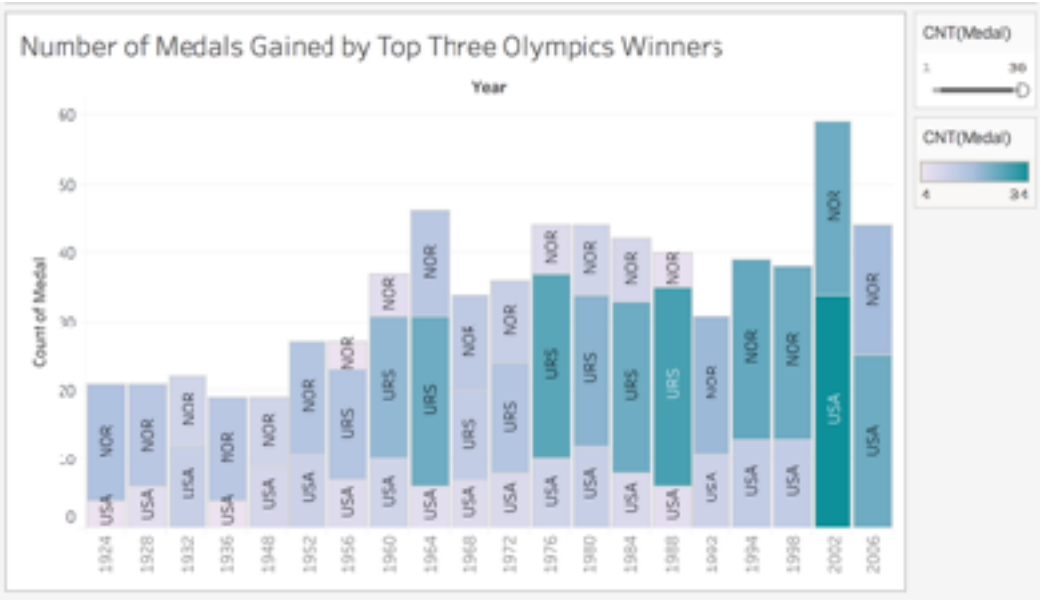


The original visualization included only one shade of color (steelblue - see image to the right). Additional features to the idiom have been added to better showcase color maps. The new visualization now displays the top three countries in terms of absolute medals one for each Olympics. While still using a histogram, bars are now divided into sections for each of the three countries. A color map from the Color Brewer site has been uploaded and is used to color each subsection of a bar with color intensity reflecting the quantity of medals won. While clearly defining differences in quantity, the color map remains within the same parameters in terms of color to comply with the 'grouping' concept of chapter 5.
The expressiveness principle is respected because the visualization displays all the necessary information and nothing beyond that. Meanwhile, the effectiveness principle is also respected as

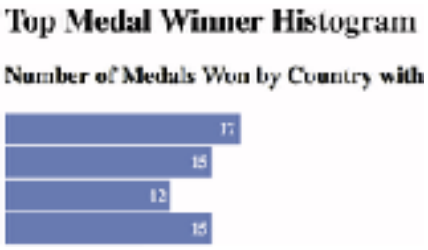
the importance of the attribute displayed matches the salience of the channel, as defined by the color map.
In terms of channel effectiveness, the histogram displays a position on a common scale and therefore ranks well among other choices of magnitude channels for ordered types.
Thanks to the use of scaling and clearly labeled quantity values for each bar and subsection, the idiom is accurate. Discriminability is not as high as it could have been with a color map allowing a wider spectrum of color, but in exchange this choice conveys 'grouping' with more clarity. Popout levels are also good as the countries that gained the most medals always stick out very easily from the others.

Lastly, the old visualization performed well when its colors were distorted through the color blindness simulator due to its simplicity. Unfortunately, given the higher level of color richness, the new visualization (PUBU5) did not do well. The RDLYBU 9 palette did a much better job because it had a wider range of colors which were much more easily separable (see last screenshot of alternative color map with Protanopia simulation).

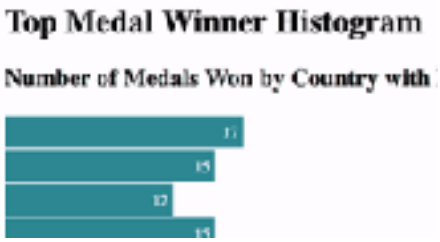
New Visualization (PUBU5):



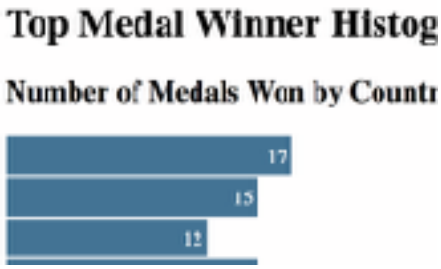
Old visualization - Protanopia (red blindness)



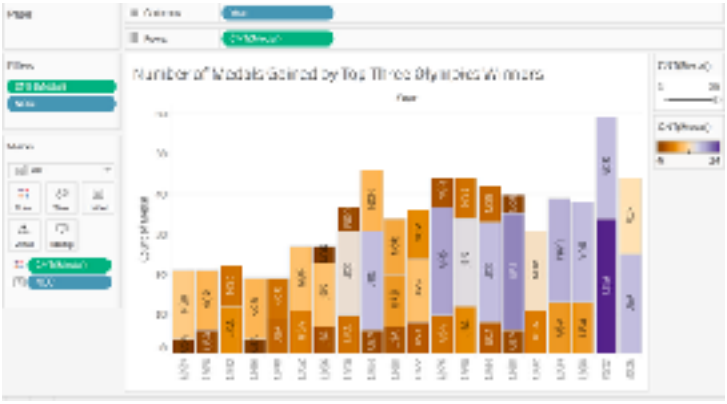
Old visualization - Tritanopia (blue blindness)



Old visualization - Deuteranopia



New visualization - RDLYBU 9



New visualization - RDLYBU 9 with Protanopia