Michaela Jai-Mei Kane
CS 171: Visualization
10/3/16

HW 4: Design Creation

1. Questions that I would like to answer regarding the dataset:
    a) What continents/countries have the highest Human Development/Gender Inequality Index (GII) values?
    b) Is there a relationship between GII and Human Development in a country?
    c) Is there a relationship between Share of Seats in Parliament and Human Development in a country?
2. See other pdf.
3.
    a) Sketch #1: For this bar chart, I used color to encode continent, the bars to encode individual countries, height of the bar to encode GII, and line density (grayscale) of each bar's shading to encode the human development level. I primarily used the Gestalt principles of proximity (grouping bars by continent using containment, color, and position), and similarity (indicating human development through similar shading patterns). This sketch primarily attempts to answer the first question by grouping countries together by continent and indicating human development and GII using different channels. It also touches on the second question – by seeing how densely colored bars of certain heights are, it is possible to draw some tentative conclusions regarding the relationship between GII and human development.

b) Sketch #2: For this scatterplot, I used circles to encode each individual country, size of the cirlces to encode human development level, color to encode continent, y-position to encode GII, and x-position to encode the share of seats women hold in Parliament. For the rough sketch, I used the Gestalt principle of similarity by grouping countries together by continent using similar colors, and by grouping countries together by human development using circle size. This sketch also uses proximity – countries with similar percentage share of seats for women in parliament and/or similar GII's are grouped together through their position on the plot. Although not pictured in this sketch, the full version of this visualization would also likely have to use the Gestalt principle of continuation – since there are quite a few data points with similar x- and y-positions, odds are some of the circles would overlap and block each other, forcing viewers to infer the blocked portions. This sketch seems to at least touch on all of the quesitons – there is a clear attempt and mapping the relationship between GII and parliament seats via the xy-plot, while human development and continent are encoded through different channels and so can also be compared to GII and to each other.

c) Sketch #3: This sketch is very similar to the previous: it uses circles to encode each individual country, color to encode continent, y-position to encode GII, and x-position to encode the share of seats women hold in Parliament, but this time color gradient of the cirlces to encode human development level. Since I thought gradient would be easier to compare than area, I decided to alter the channels I used for this visualization. This plot also uses the Gestalt principles

of proximity and similarity in the same ways as stated previously. However, it would hopefully have less need for the Gestalt principle of continuation – hopefully if the circles are all the same size, there will be slightly less overlap, or at least the overlap may be controlled by extending axes. This visualization also attempts to answer all of the above questions and in the same way as the previous sketch; however, human development is now encoded in a color gradient, which relates more closely to the color encoding for continent.

Design Critique

I critiqued the third visualizaiton of hchase@college.harvard.edu.