CS 171 HW 3: Design Critique

1. The audience includes health professionals and policy makers who want to understand the breakdown of deaths by cause.
2. The visualization answers the following questions: What are the major cause-of-death categories? For each cause-of-death, what has been the annual % change from 2005 to 2010? What are the relative rates of occurrence of the different causes-of-death?
3. The data represented in this visualization falls into several categories. There is categorical data in that we have different cause-of-death "bins" represented here. For each bin, the volume represents relatively how many people have died of that cause. The color of that bin also corresponds to numerical data on the annual % change from 2005 to 2010 of the number of people who have died of this cause.
4. Rectangular prism (mark) encodes the categories of data (causes-of-death). The volumes (channels) of the prisms encode the relative number of people who died of that cause. As noted, color saturation (channel) encodes annual percentage of change between 2005 and 2010.
5. Color is used in that yellow, green, and pink are used to categorize the different causes-of-death by type, and different categories within each are saturated by annual % change. Contrast is used in that the colors and saturations levels differ, but the contrast between different saturation levels are not that extreme, causing possible confusion as to what annual % change is being indicated, especially for the very small categories. Another issue is that the colors used for the 3 large buckets of types of causes are a bit broad, not allowing for much differentiation of types of causes, say, within infections diseases & birth problems, which are already rather different categories.
6. Tufte's design principles are violated because the data-ink ratio is rather low, since they could have used 2D rather than 3D to save on ink and still convey the same information. Also, the relative differences in volume are very hard to elucidate, and a simple bar graph could have been clearer and more concise. However, the colors are used in a muted, sparing manner that is not overly distracting, a characteristic of simplicity that Tufte could appreciate since the colors are necessary for differentiation.