HW3 - Design Analysis

#school/sophomore/fall/cs171

1. Who is the audience?

The intended audience of this visual is the general public, specifically readers of Wired.

2. Which questions does this visualization answer?

- What are the leading causes of death in the world?
- Are these causes of death currently on the incline or decline?
- How do the three categories of causes (injuries, noncommunicable diseases, and infectious disease and birth problems) compare to one another?
- What proportion of noncommunicable diseases does cancer make up?

3. What data is represented in the visualization?

Some pieces of information which are represented in this visualization are:

- The percentages for causes that make up all untimely deaths
- Percentages that make up each category (injuries, noncommunicable diseases, and infectious disease and birth problems)
- The annual percent of change for each cause (between 2005 and 2010)

4. For each data type, describe how it is encoded in the visualization using Bertin's marks and channels.

Channels:

- (Identity) The color hue indicates the category of causes
- (Magnitude) The color saturation encodes the annual percent of change for each cause between 2005 and 2010

Marks:

- The area of the topmost part of each rectangular prism encodes the prevalence of the cause. (The third dimension in this visual is unnecessary. No information is encoded by the volume.)

5. How are the perceptual channels contrast and color used in the visualization?

The three hues chosen (yellow, green, and pink) are very distinct from one another which

makes it easy to distinguish the three categories of causes at a glance, and the saturation of colors does a good job of illustrating the percentage of annual change for each cause of death. One potential problem I see in this encoding, however, is that nearby rectangular prisms of the same saturation and hue become difficult to differentiate from one another. Another problem is that this type of encoding can be particularly difficult for those who are color blind/color deficient to decipher.

6. How are Tufte's design principles used or violated in this chart?

The third dimension of this visual violates Tufte's principles on chart integrity, since the third dimension creates distortion and therefore unnecessarily increases the visual's lie factor as well as its data ink ratio. Tufte would probably classify this third dimension as chart junk. Tufte also doesn't believe that area should be use to show one dimensional data as is done in this visual.