# Visualization Goals

## Communicate (Explanatory)

* Present data and ideas
* Explain and inform
* Provide evidence and support
* Influence and persuade

## Analyze (Exploratory)

* Explore the data
* Assess a situation
* Determine how to proceed
* Decide what to do

# Effective Visualizations

* Have a graphical integrity
  + Your bar chart has to start at zero
  + If your graph is not zero-based, make it very clear in the graph with a comment, etc.
* Keep it simple
  + Maximize the data-ink ratio
  + Data-ink ratio = Data ink / Total ink used in graphic
  + 3d pie charts are bad
  + Avoid chartjunk
    - Extraneous visual elements that distract from the message
  + <http://extremepresentation.typepad.com/files/choosing-a-good-chart-09.pdf>
  + They are meant to offload the thinking so that you do not have to think very hard.
    - Look at wtf visualizations for bad examples.
* Use the right display
  + Bars vs. lines
    - Bar imply separate data
    - Lines imply continuous data
* Use color strategically
  + Whenever possible, don’t use color
  + Don’t use more then 5-8 colors
    - Don’t use the entire rainbow
  + If use color, use color brewer
* Tell a story with data
* Further reading
  + Edward tuft
  + Stephen few