Tuftish principles

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Tuftish principles

All non-data-ink, or redundant data-ink is called Chartjunk. Here we will discuss a couple forms of chart junk, data-to-ink ratio and ducks.

Data-to-Ink Ratio

Some have put this into a formula

data-ink ratio = data-ink/ total ink used to print the graphic

Let's play a game

Which chart is better, top or bottom?
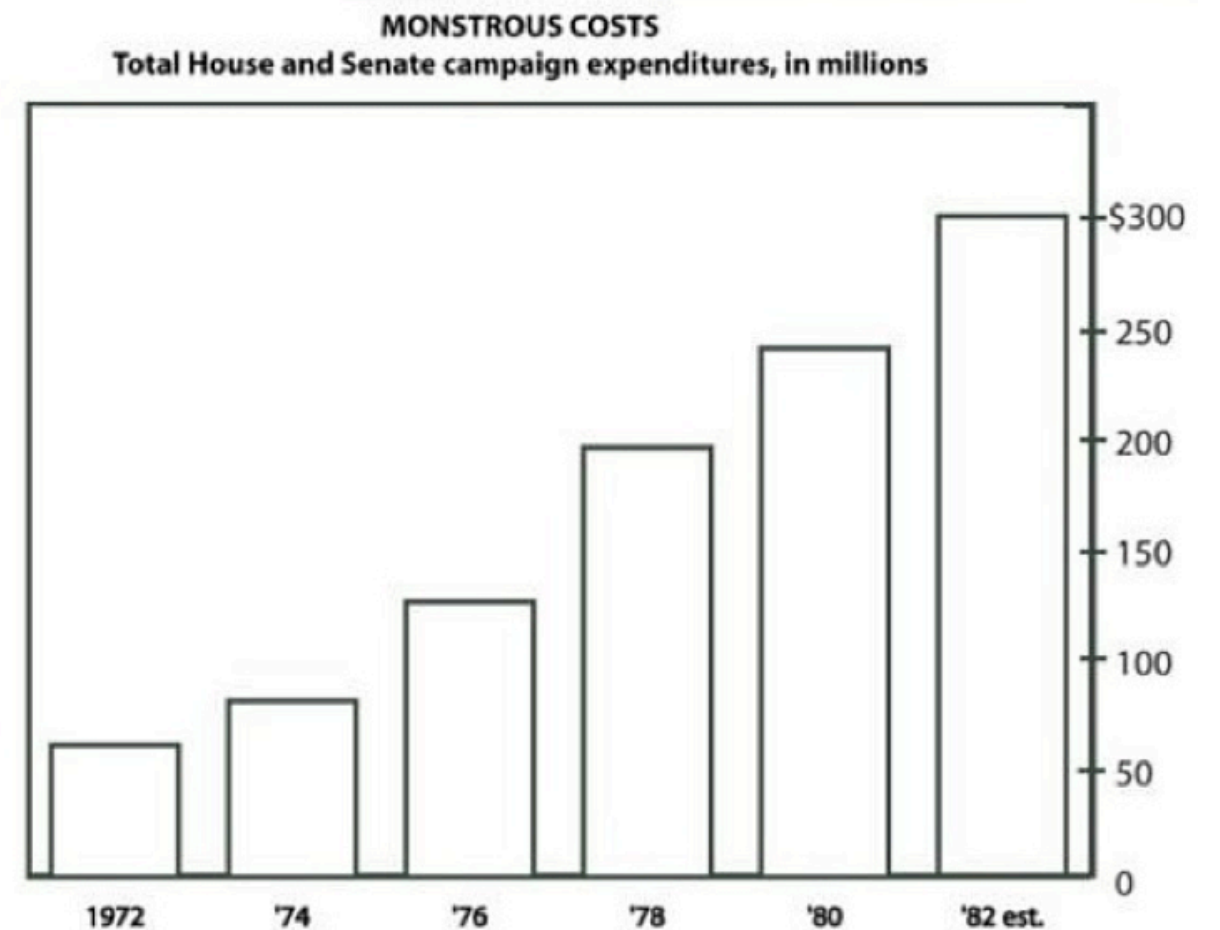
Nigel Holmes ChartJunk Study

The Study

This research was designed to test the influence of chartjunk vs. plain ("minimalist") graphs on two effects: comprehension and recall.

 Fourteen data visualizations were used, each consisting of two versions: one "embellished" and one "plain." For each chart, participants were asked to answer the four following questions

- What is the chart about?
- What are the displayed categories and values?
- What is the basic trend of the graph?
- Is the author trying to communicate some message through the chart?

The Findings

"We found that people's accuracy in describing the embellished charts was no worse than for plain charts, and that their recall after a two-to-three-week gap was significantly better. Although we are cautious about recommending that all charts be produced in this style, our results question some of the premises of the minimalist approach to chart design."
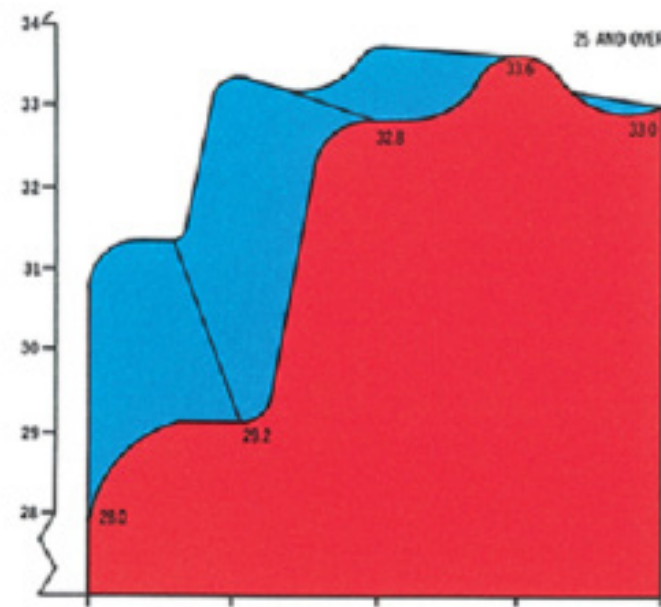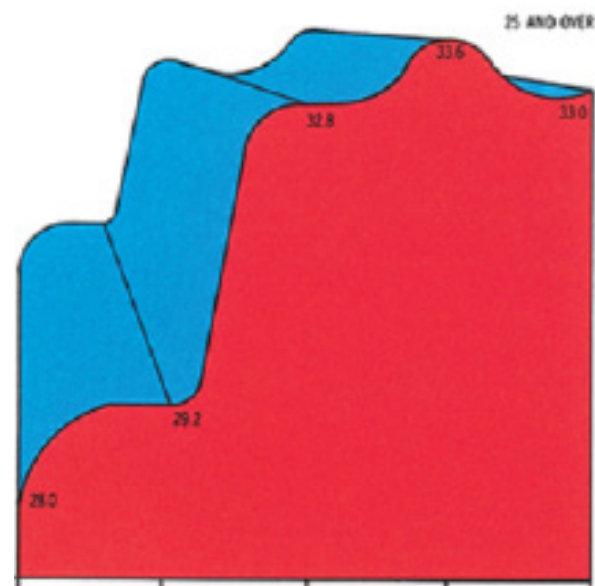
Extreme Minimalism
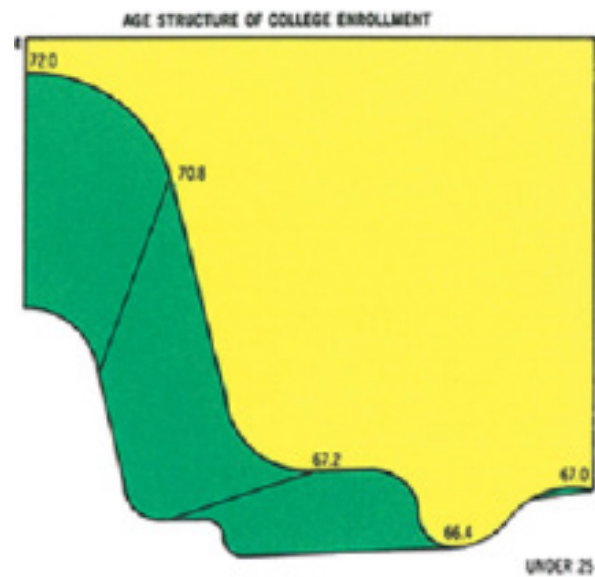
Stephen Few's recreation of Tufte's minimum data-ink ratio argument.
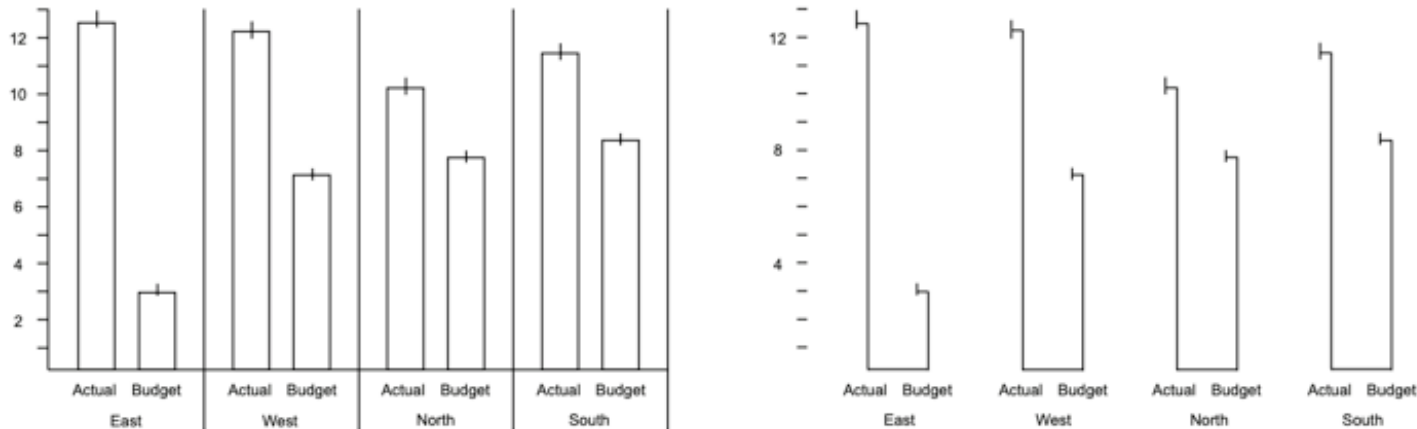
Stephen Few's agrues that a designer should aspire to maximize the data-ink ratio, within reason, but keep in mind the goal is communication not a all data-ink ratio,.

Ducks

Ducks are frills, or ornaments. A design element that is used to make something look more attractive but usually having no practical purpose. In the case below the top part of the graph conveys exactly the same information as the bottom so only one of the two can be kept.

AGE STRUCTURE OF COLLEGE ENROLLMENT

72.0

70.8

67.2

66.4

67.0

UNDER 25

25 AND OVER

33.6

32.8

33.0

29.2

28.0

25 AND OVER

33.6

32.8

33.0

29.2

28.0

Redefining chart junk

Chart junk is any element of a chart that does not contribute to clarifying the message.

Too many bars? Get rid of them!

Too few bars? Add them!

Need context? Add it!

Is the use of color is distracting? Change it!

Rather than focus on minimization at all cost, focus on clarity. Tufte's metric should be thought of as guiding heuristics but the designer should always keep in mind the goal is communication and clarity not blindly following rules.

Credit:
Note the images used are from the Tufte PDF given in the assignment, Nigel Holmes and Stephen Few.