

Words of Wisdom from Edward Tufte

As captured by Ranganath Nayak
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Introduction

Edward Tufte is the author of three excellent books: *The Visual Display of Quantitative Information*, *Visual Explanations*, and *Envisioning Information*. He is a professor emeritus at Yale. I took his course, which I loved for the entertainment, and took some notes. Here they are.

Seven Grand Principles

1. Enforce visual comparisons. Show now versus then, this location versus that, this treatment versus another.
2. Show causality in your data—mechanism, explanation, and dynamics. Do not be merely a recorder of data.
3. Show more than one or two variables if you want your charts to be interesting. Also, such charts are more likely to give you unexpected insights than simple charts.
4. Completely integrate word, number, and image. Put diagrams in the line of text. Show charts right next to where you refer to them. Don't show complex legends on your charts. Don't use endnotes or foot notes; use margin notes.
5. The quality, integrity and relevance of the content are paramount. Only after you have got these should you get to cleverness in display. Care about your message.
6. Show data adjacent in space (where the eye can compare them, back-and-forth, as much as it wants), rather than adjacent in time (one after the other, difficult to compare).
7. Use 'small multiples': the same, simple diagram repeated many times, showing data from different days, different samples, etc. In this way, you take advantage of the viewer's investment in understanding your basic design. Small multiples have a natural credibility. Show all your data. Don't select your evidence. Mastery of detail helps establish credibility.

Financial data

1. The central goal is assessment of change – what's different from the last time we looked?
2. Use a simple design with both detail and overview. Show mean and variation.
3. Make time series data comparable. For example, adjust for inflation.
4. Don't trust the display if it does not have footnotes.
5. Use annotations to provide explanations.
6. For routine data, do what the NYTimes and The Wall Street Journal do: (high resolution, widespread standard, clear. Copy! Don't be original, be right!)
7. Use 'spark lines' to show long series of data.

Three demands to make of a speaker for a important decision

1. Show me causality!
2. Show me all relevant data.
3. Tell me what I really need to know to make this decision.

Rules for presentations

1. Show up early (and make sure all's well)
2. Tell people early about: problem, relevance, solution.
3. Never apologize at the beginning (e.g., for being sick).
4. Give everyone in your audience a handout.
5. Understand what your audience reads, and, therefore, what their standards are.
6. Don't use bullet lists.
7. Respect your audience. If you don't, don't speak.
8. Be very careful about humor. Most often, it back fires.
9. Don't use masculine pronouns as universals.
10. Believe in your material. Act confident.
11. Finish early. (When did you ever hear somebody say, "That meeting was too short"?)
12. Rehearse. Videotape yourself and watch the tape.
13. Emphasize the content and its logic and clarity.

Other sayings

1. The point of information display is to assist thinking.
2. Good visual design is clear thinking made visible.
3. Chart junk is a sure sign of statistical stupidity.
4. There are only two industries that refer to their customers as 'users': drugs and computers.
5. At least 80% of every screen should be devoted to content, as opposed to administrative overhead.
6. The human eye/brain system can process 150MB in a flash
7. Computer monitors have very low resolution compared to good quality paper. They are not a good way to convey lots of information.
8. Digital media are not of archival quality. When the reading device is gone, the data are effectively lost. This is different from paper.
9. Great displays don't just show your conclusions, they help you to arrive at conclusions. (Examples: cholera epidemic in London; shuttle Challenger data.)
10. Keep background stuff, like grids, as faint as is practical.
11. Don't use color in non-intuitive ways. (Ocean depths should go from light to dark blue, not from orange to blue.)
12. Guidelines for stuff on websites: less is better. Always.