

What if Tufte Ran the IR Office?

by Liz Sanders, lsander3@depaul.edu
06/01/10 Chicago AIR

The 6 Design Principles for Graphical Excellence

The purpose of an evidence presentation is to assist thinking. The principles of analytical design are derived from the principles of analytical thinking. These principles relate to both producing presentations and consuming presentations—after all, we're all in this together.

Show comparisons, contrasts, differences

The fundamental analytical act in statistical reasoning is to answer the question "Compared with what?" Visual displays, if they are to assist thinking, should show comparisons.

Show causality, mechanism, structure, explanation

The reason we examine evidence is to understand causality, mechanism, dynamics, process or systematic structure. Principles of design should attend to these tasks.

Show multivariate data—more than 1 or 2 variables

The only thing that is 2-dimensional about evidence is the physical flatland of paper and computer screen. Strategies of design should make the multivariate routine.

Completely integrate words, numbers, images, diagrams.

Tables of data are paragraphs of numbers, tightly integrated. Don't rely on a single mode of evidence—frame research questions along the lines of "how can something be explained?" Use whatever it takes.

Thoroughly describe the evidence—provide detailed title, authors and sponsors, data sources, measurement scales, and relevant issues. Take responsibility for the analysis, demonstrate credibility; give credit.

Analytical presentations ultimately stand or fall depending on the quality, relevance, and integrity of their outcomes. Content counts most of all—and this suggests that the most effective way to improve a presentation is to get better content. Design cannot salvage failed content.

Taken from E. Tufte, *Beautiful Evidence*, pp. 120-139.

How did we get started?

The first steps to a Tufte-centered approach to information design were to assess our readiness to change and then take inventory of what we do, and where the short/long-term opportunities are: standard management reports, research reports, ongoing research partnerships—action research projects, and formal presentations.

Were we ready to change?

Attending the Tufte course motivated many to adopt new practices and begin to change. He is an engaging and funny lecturer. He lives his philosophy.

Our short-term opportunities?

Basic report and graphic modifications can begin immediately.

Supergraphic development is next in our adoption process.

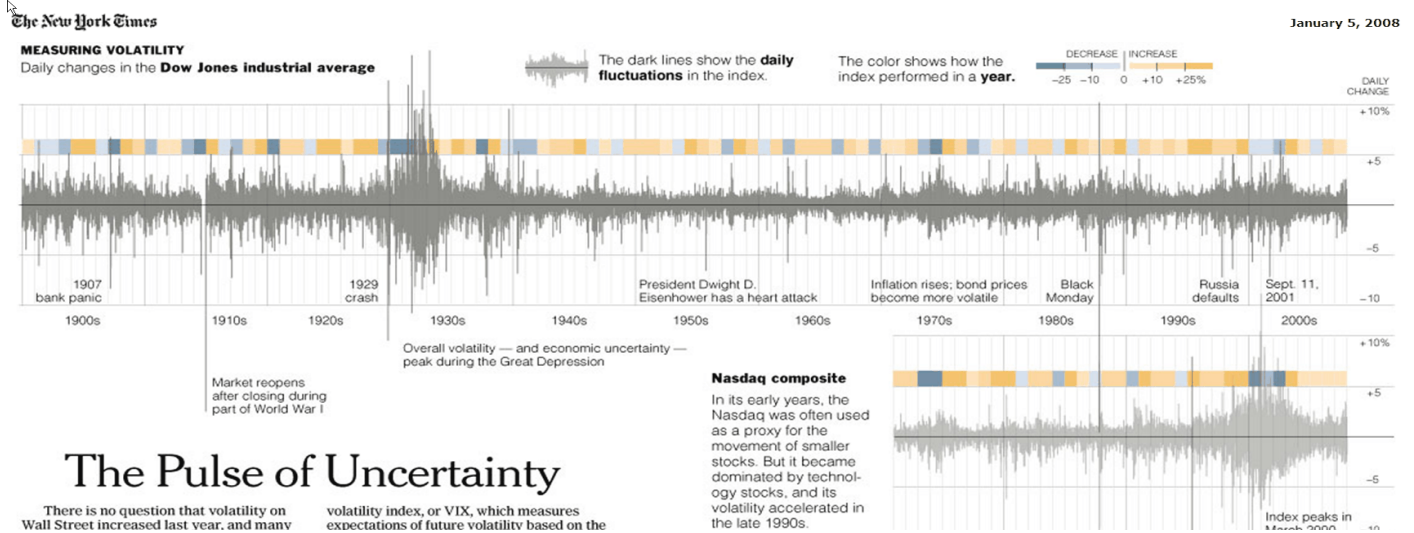
Our long-term challenges?

Presentations and the supplemental materials continue to challenge us. Learning curves, presentation styles, and time restrains us.



The box of Tufte books that is part of the lecture series for all attendees. Tufte will autograph copies before class. Photo thanks to <http://www.codinghorror.com/blog/2006/12/reading-with-edward-tufte.html>

Some of Tufte's examples of good visual displays:



The Pulse of Uncertainty

There is no question that volatility on Wall Street increased last year, and many volatility index, or VIX, which measures expectations of future volatility based on the

This superb work was done by Amanda Cox, *The New York Times*, and published January 6, 2008. http://www.edwardtufte.com/bboard/q-and-a-fetch-msg?msg_id=00035a&topic_id=1



Sparklines: Theory and Practice. Discussion Board post by Mariano Belinky, March 2005. www.edwardtufte.com. For an interesting comparison between bar graph and sparklines, see: <http://intepid.com/2004-12-06/23.32/>

Tufte Sources

Edward Tufte Publications below. Also visit <http://www.edwardtufte.com/tufte/>
Beautiful Evidence. Second Edition. Cheshire, CT: Graphics Press. 2001.
Envisioning Information. Second Edition. Cheshire, CT: Graphics Press. 2001.
The Visual Display of Quantitative Information. Second Edition. Cheshire, CT: Graphics Press. 2001.
The Cognitive Style of Powerpoint. Second Edition. Cheshire, CT: Graphics Press. 2001.

These comments about Tufte's approach highlight the challenges that we continue to face:

"Tufte is really proud of this graph (*Napoleon's March to Moscow*). I think this is one of the worst graphs ever made. He's very happy because it shows five different pieces of information on three axes and if you study it for 15 minutes it really is worth 1000 words. I don't think that is what graphs are for. I think you are trying to make a point in two seconds for people who are too lazy to read the forty words underneath."
Seth Godin, <http://www.juiceanalytics.com/writing/godins-take-on-tufte/>

"Tufte completely ignores many different kinds of presentations. He seems to think all we do is analyze and present statistics! On the contrary. Among the presentation purposes that come immediately to mind are planning, overview, inspiration and motivation, explanation, and reporting. In all of these, PowerPoint can be useful. To my mind, it's not PowerPoint that is at fault, but the lack of skills in using it." Bob Horn, http://www.sociablemedia.com/articles_dispute.htm

"Edward and I disagree. He thinks people are a lot smarter than I do. He likes packing a ton of information into a slide and letting people teasing it out..." Seth Godin, www.sociablemedia.com/articles_dispute.htm

"Tufte is so focused on the one problem he is unparalleled at thinking about (information design) that he is missing several other problems that are equally important in this context (usability, usefulness, speed, appropriateness)." Christopher Fahey, www.graphpaper.com

Better Visual Displays

What we learned?

This is an analytical as well as a design challenge.

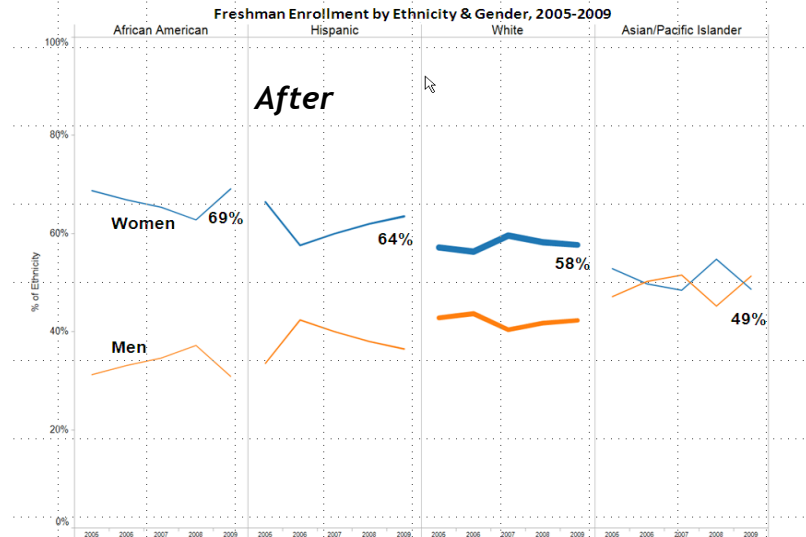
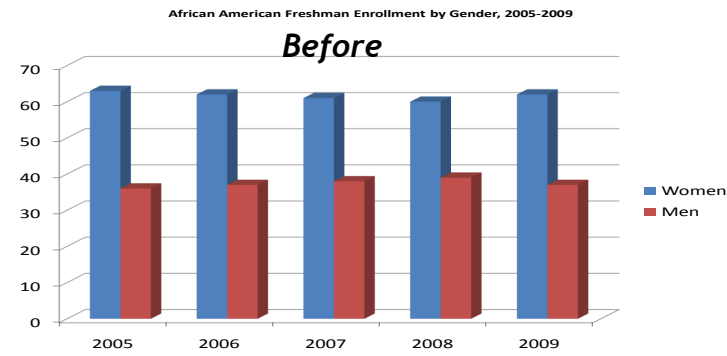
By moving away from simplistic unidimensional graphs to multi-graphic displays with adjacent information from blended software, information is richer, gives fuller picture of the data's story. Try new software—experiment and try to teach old software new tricks.

Reader usability is key in this process: Have colleagues review the graphic: what do they see and how do they see it?

What are the challenges?

This is a time intensive process, it is iterative, and software flexibility is limited. It is also time intensive for the reader, requiring a new level of engagement with the content in order to effectively receive the 'data dump.'

Sometimes, design compromises are required. Tufte completes his charts in Adobe Illustrator—we are not doing this.



Better Reports

What we learned?

We developed a standard design template for all reports, dense, with meaningful color changes, and conditional formatting. Our aim was to minimize the lines, grids, and non-essential ink, and provide relevant contextual information and documentation.

What are the challenges?

Standard reports that are automatically generated were not an area for extensive redesign, annotation, and integration. Design modifications were focused on cleaning up chart-junk and providing relevant context.

Interactive reports such as pivot tables can be given a cleaner design, but are largely providing the reader with the ability to shape the data inquiry. This on-demand interface challenges design concepts, adjacent information, and annotation.

Better Research Partnerships

What we have learned?

Reaffirms analyst's role as data expert, and the purpose of these evidence presentation meetings as assisting thinking.

By moving away from simple, single-graphic presentation pages to multi-graphic displays with adjacent information from blended software, information is certainly richer. Many research partners are engaged in thinking about the information and appreciate the opportunity to have more complex discussions.

What are the challenges?

This type of visual display development is a time intensive process.

Supergraphics are by design dense data dumps. Using them requires a change in culture—an engaged audience that wants to spend time looking at and thinking about the data. Some of our research partners want more synthesized findings, they don't want to analyze the data themselves.

Better Presentations

What we have learned?

As an expert in the data patterns, the analyst's role is to present the findings—the software plays a supporting role. We need to move away from bulleted lists of text and reading text to the audience. Presentation skills in both formal or informal environments are critical.

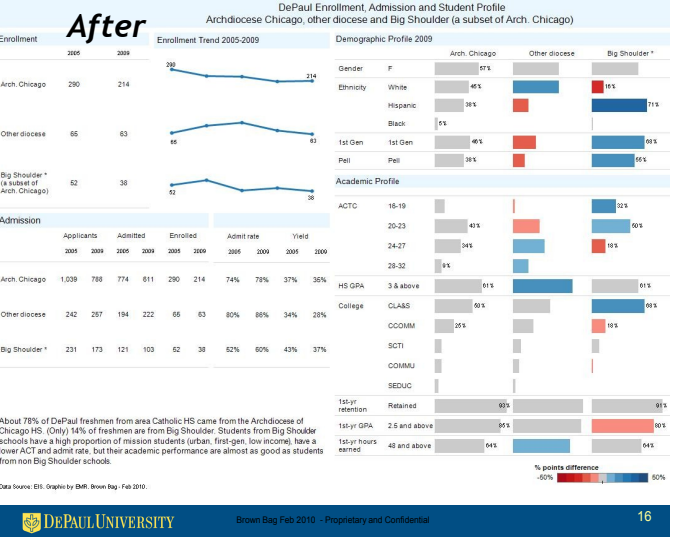
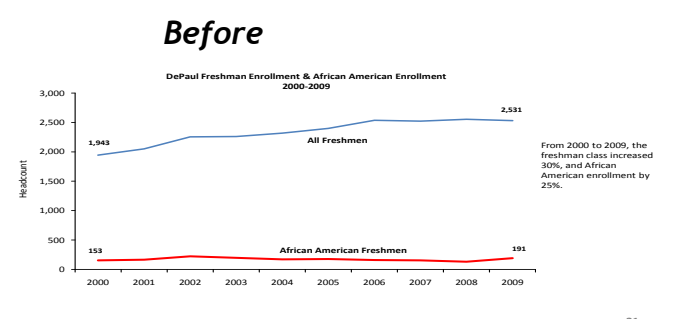
What are the challenges?

Supergraphics require a change in culture, and an engaged audience. Our audience for larger presentations expects to be "presented" with findings and engage on implications. We struggle with the right Tufte-centered format for presentations. This transformation takes time. (Comment and Tufte's Response: Tufte website)

The problem is with presenters who misuse PowerPoint. PowerPoint is just a tool; why blame the software for bad presentations? When a carpenter makes a crooked cut, do we blame the saw? Just because some people do silly things in PP doesn't mean that PP has a problem; people do silly things in written reports also.

This makes one good point: responsibility for poor presentations rests with the presenter. But it is more complicated than that. PP has a distinctive, definite, well-enforced, and widely-practiced cognitive style that is contrary to serious thinking. PP actively facilitates the making of lightweight presentations.

How has African American enrollment trends compared to overall freshmen?



Before: Background

- Natural affinity of mission between DePaul and area Catholic schools, yet historically not a focal point of enrollment strategy.
- Long-term decline in enrollment from Catholic schools but little external data on Catholic high school graduates to inform analysis.
- Multiple relationships between DePaul and Catholic schools but lack of a campus-wide strategy.
- Given their enrollment profile, Catholic schools are important to DePaul's access strategy, particularly given research on their success in educating low-income students.

