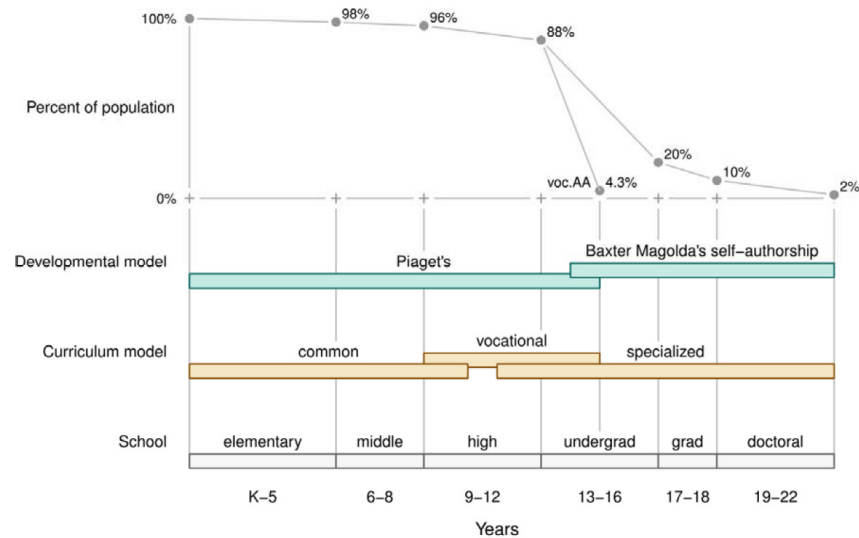


Revising

displays



The data are of two types: univariate spans of years and a bivariate time series. The data sets have the same time framework so a horizontal time scale unifies the graph structure.

prose

The time scale is conventionally oriented from left to right as suggested by Robbins [4, pp. 283]. With the start of kindergarten (K) as year 0, the year axis is drawn to scale [4, pp. 197], providing the common, aligned scale recommended by Cleveland [3]. This new structure is de-emphasized by drawing it in shades of gray [4, pp. 185]. Because the school labels “elementary”, “middle”, etc., describe spans of years, the year axis labels are also shown as spans of years. Axis tick marks are therefore unnecessary.

To show both types of data in one graph, the data rectangle is divided into upper and lower regions separated by a horizontal line. Vertical grid lines span the lower portion only, enhancing the visual separation between the two regions and helping a viewer compare the spans and overlaps of the categorical data. At the top of the grid lines, a small plus symbol acts as a tick mark for the time series, subtly emphasizing that the upper region is a conventional scatter plot.

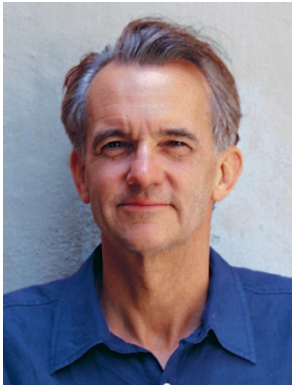
Revising displays: Keep your rhetorical goals in mind.



Howard Wainer
1943 --

- For any data set there are many possible good displays
- Because images are more memorable than words, it is even more important to revise our displays than our words.
- A display is never done—genius is the infinite capacity for taking pains.
- Accurate interpretation of results often needs more information.

Revising displays: Keep your rhetorical goals in mind.



Edward Tufte
1942 --

- Design principles generate design options.
- Principles should not be applied rigidly or in a peevish spirit.
- It is better to violate a principle than to place graceless or inelegant marks on paper.
- Principles of design should be greeted with some skepticism.
- What is sought in design is the revelation of the complex.

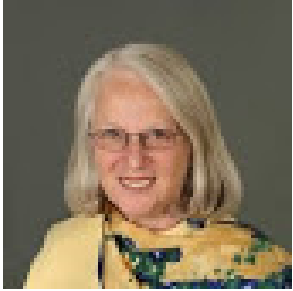
Revising displays: Keep your rhetorical goals in mind.



John Tukey
1915-2000

- The greatest possibilities of visual display lie in vividness and inescapability of the intended message
- A picture may be worth a thousand words, but it may take a hundred words to do it.
- The greatest value of a graph is when it forces us to see what we never expected
- The purpose of display is comparison, not numbers

Revising displays: Keep your rhetorical goals in mind.



Naomi Robbins

- Proofread your display
- Make sure your display is consistent with your prose
- Graphing data is an iterative, experimental process
- Many useful displays require careful, detailed study by the viewer

Revising displays: Keep your rhetorical goals in mind.

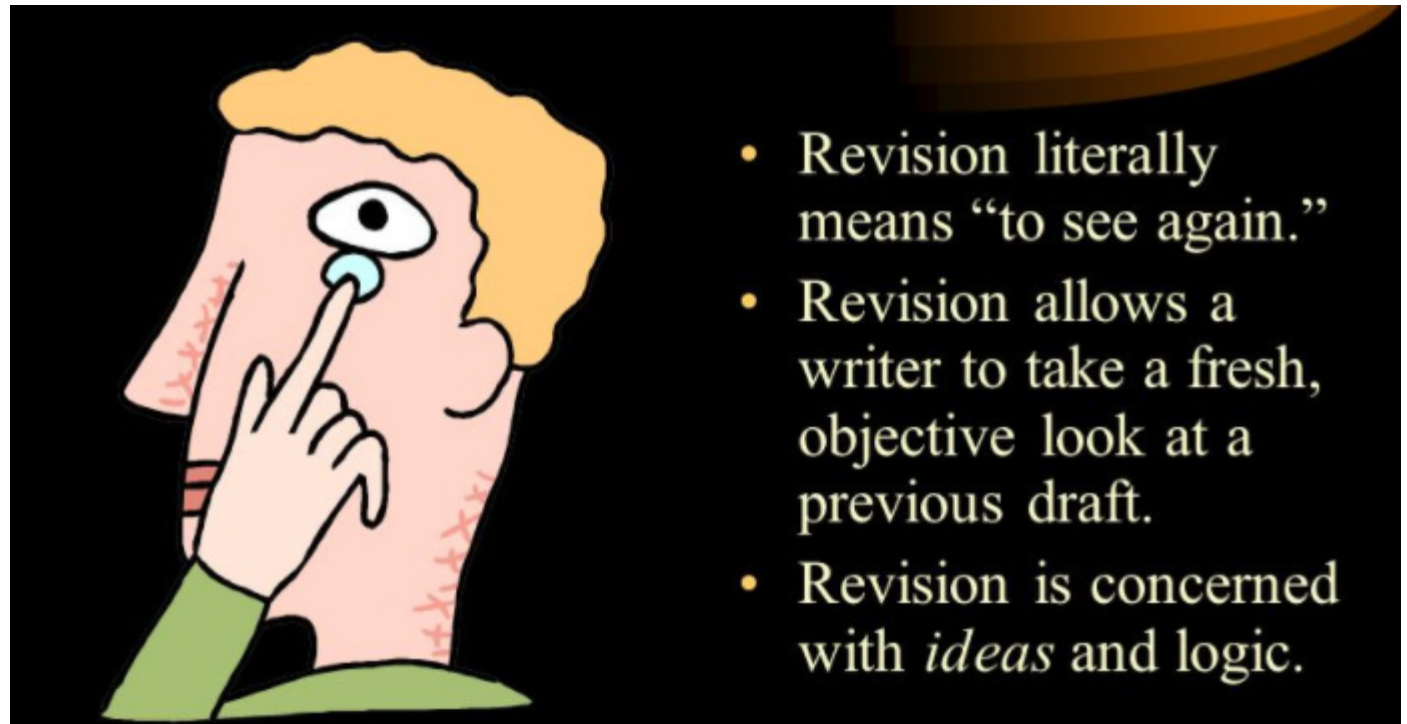


Cole Nussbaumer Knafl

- We aren't naturally good at storytelling with data
- Telling stories with data is an important skill in our world of data-driven decisions
- Who is your audience? What do you need them to know or do?
- Clutter is your enemy
- Focus your audience's attention
- Think like a designer

Revising your prose: Focus on substance

- Accurate information and sound ideas
- Main points are distinguishable from supporting details
- Evidence supplied for all assertions
- Does the structure and organization support the argument?



Editing your prose: Focus on economy

- Are readers likely to misunderstand a concept or an inference?
- Topic sentences introduce and explain every main idea
- Streamline sentences that have grown unwieldy and hard to follow
- Subject-verb-object sentence core should reflect the most important content
- Strengthen transitions
- Refine word choice

You have to be **ruthless** to be a good editor.

You may have to **extensively cut**, **correct** or **re-order**.

A good editor will wield the chainsaw where it is needed and **eliminate redundancies, inconsistencies, incorrect usages and excessive verbiage**.



THE CHAINSAW MASSACRE

Proofreading your prose: Correcting mistakes

- Verbs and pronouns agree in number with subjects and antecedents
- Independent clauses within sentences are separated with colons and semicolons, avoiding comma splices
- Proper nouns are correctly and consistently capitalized
- Correct errors in typography, punctuation, or spelling.



In publishing, proofreading happens after the manuscript has been printed. A final copy of the manuscript, or proof, is then examined by a professional proofreader.

What story are you telling?

- context
- truth
- message
- spin

