



EDWARD TUFTTE'S 'THE VISUAL DISPLAY OF QUANTITATIVE INFORMATION' – DATA INK AND CHART JUNK

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University
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A step-change in
quantitative social
science skills
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TUFTE'S DATA INK PRINCIPLES

1. Above all show the data
2. Maximize the data-ink ratio
3. Erase non-data-ink
4. Erase redundant data-ink
5. Revise and edit

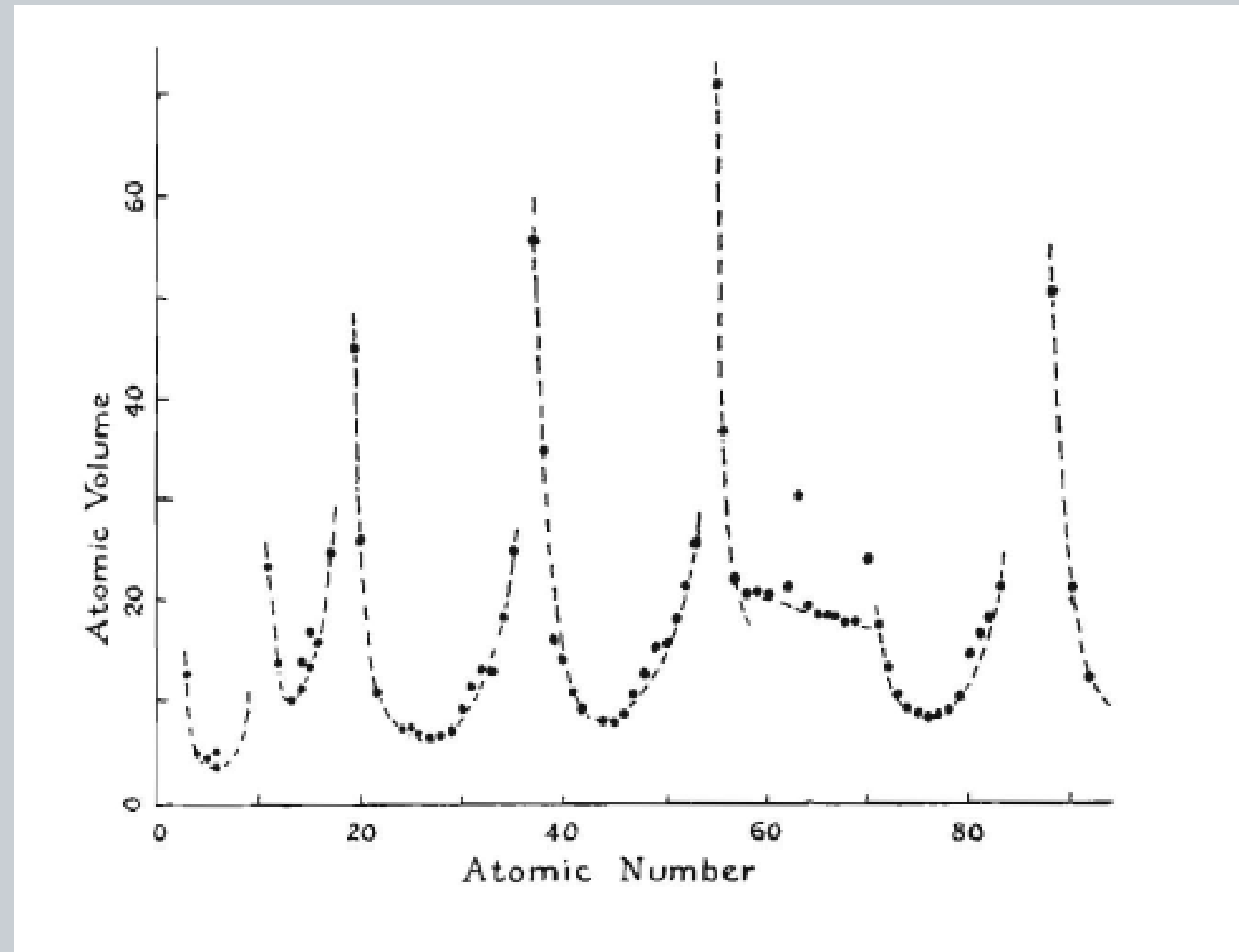
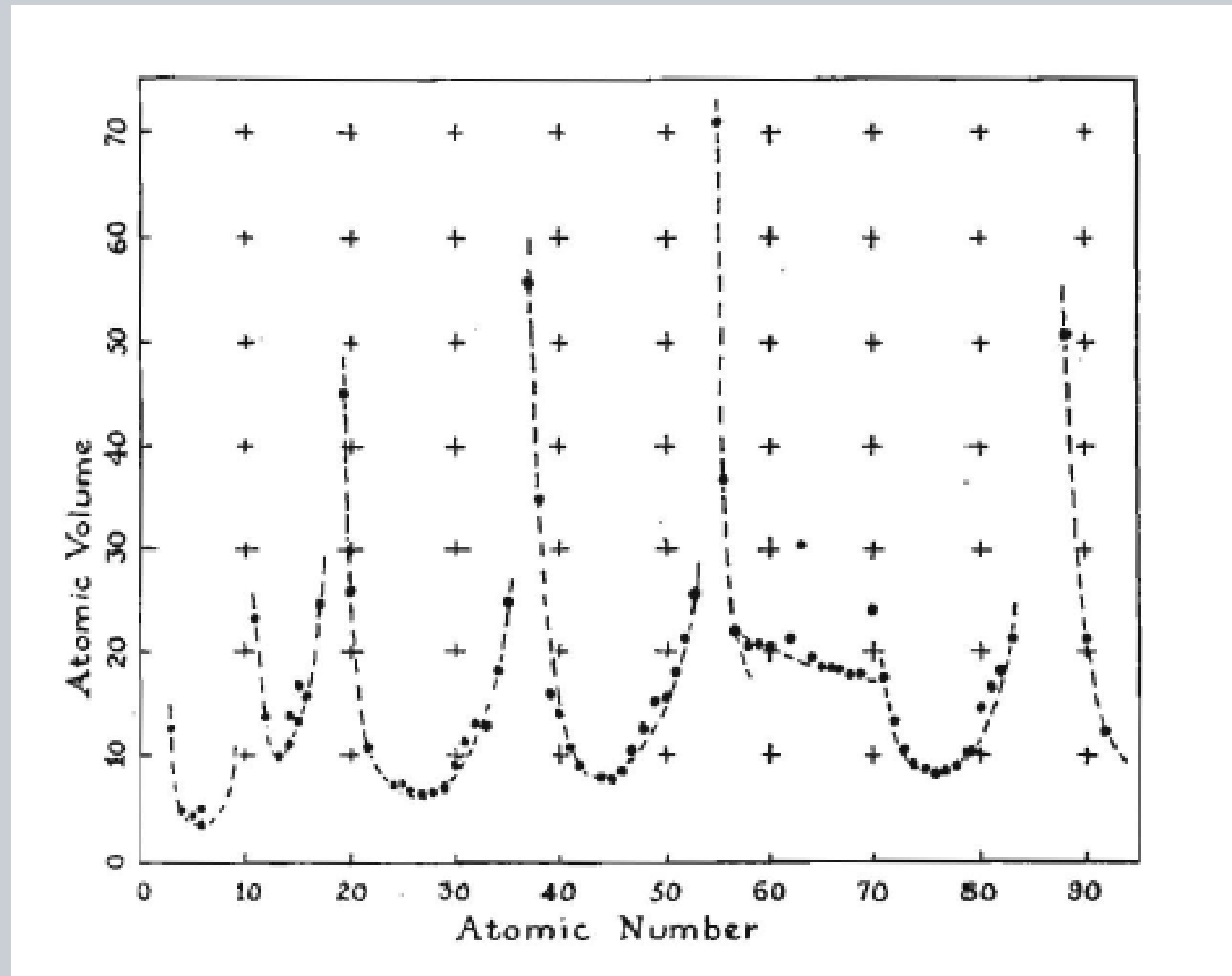
FOR IDEAL DATA-INK RATIO

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

= proportion of a graphic's ink devoted to the non-redundant display of data-information

= 1.0 – proportion of a graphic that can be erased without loss of data-information

TUFTE'S DATA TO INK RATIO



Linus Pauling, *General Chemistry* (San Francisco, 1947), p. 64, in Tufte (2007).

CHART JUNK

What is it?

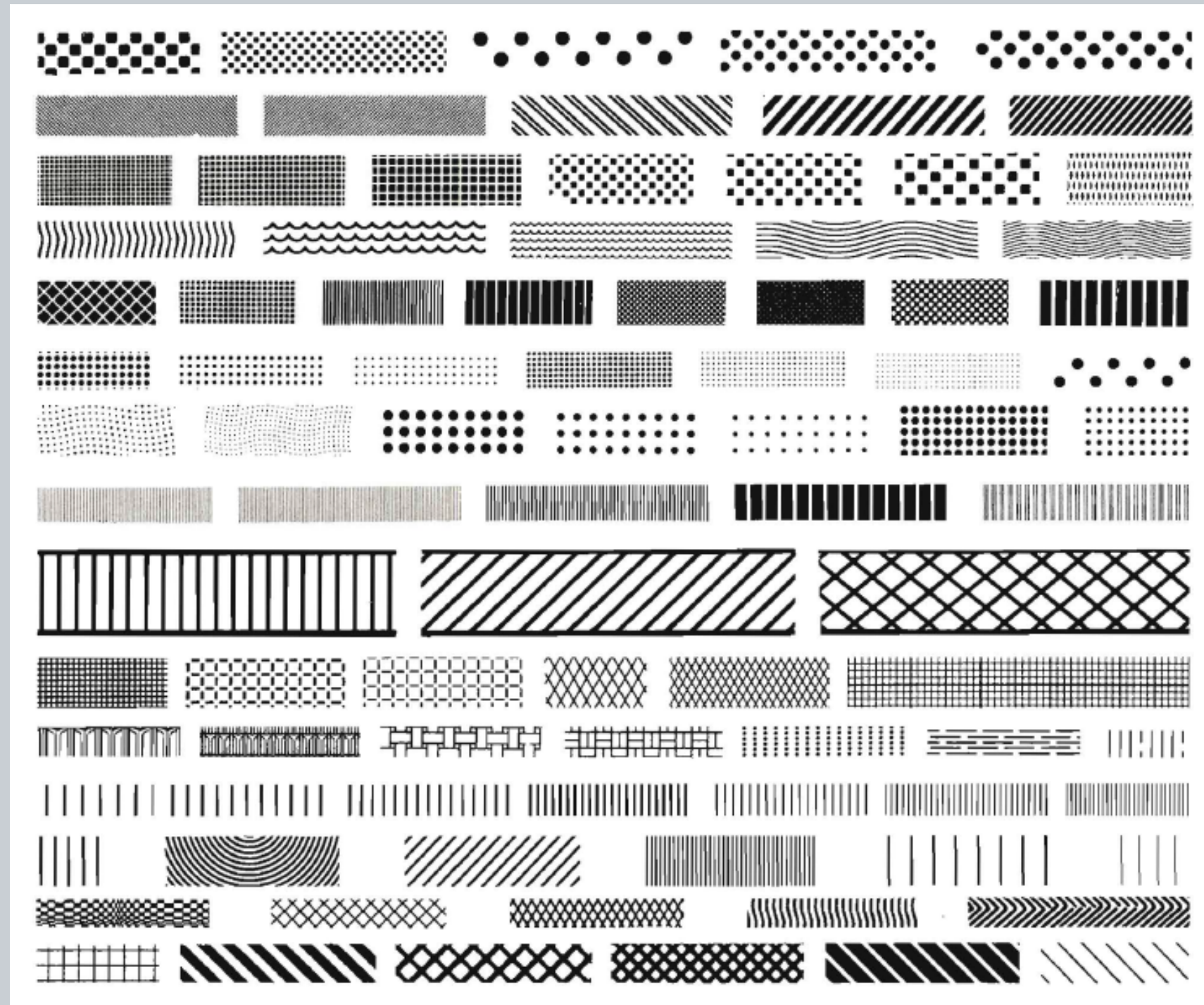
- Visual elements that aren't necessary to understand the graph
 - and may detract from it

Principle

Forgo chart junk, including

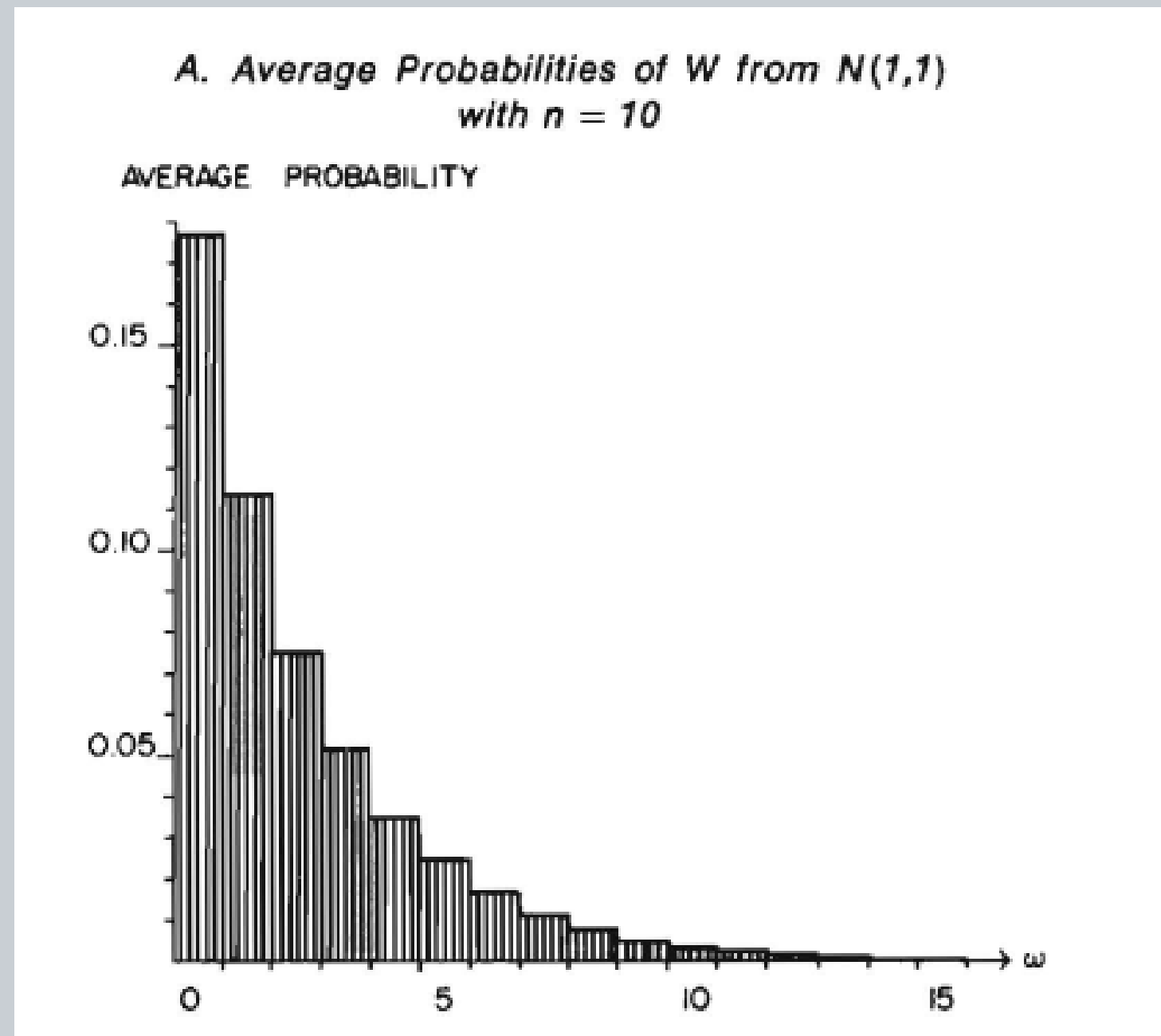
- moiré vibration
- the grid
- the duck

MOIRÉ VIBRATION



From Tufte (2007).

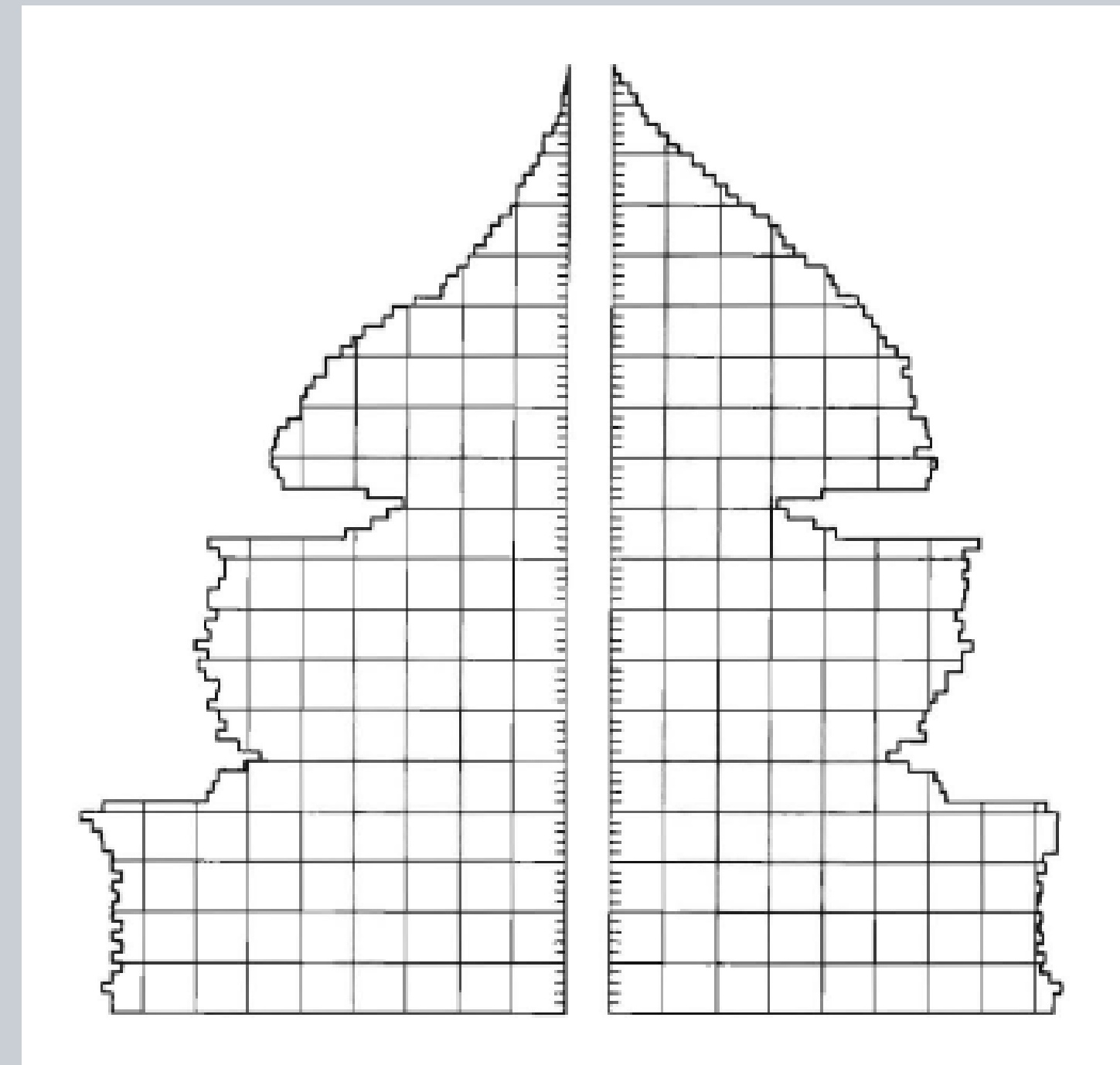
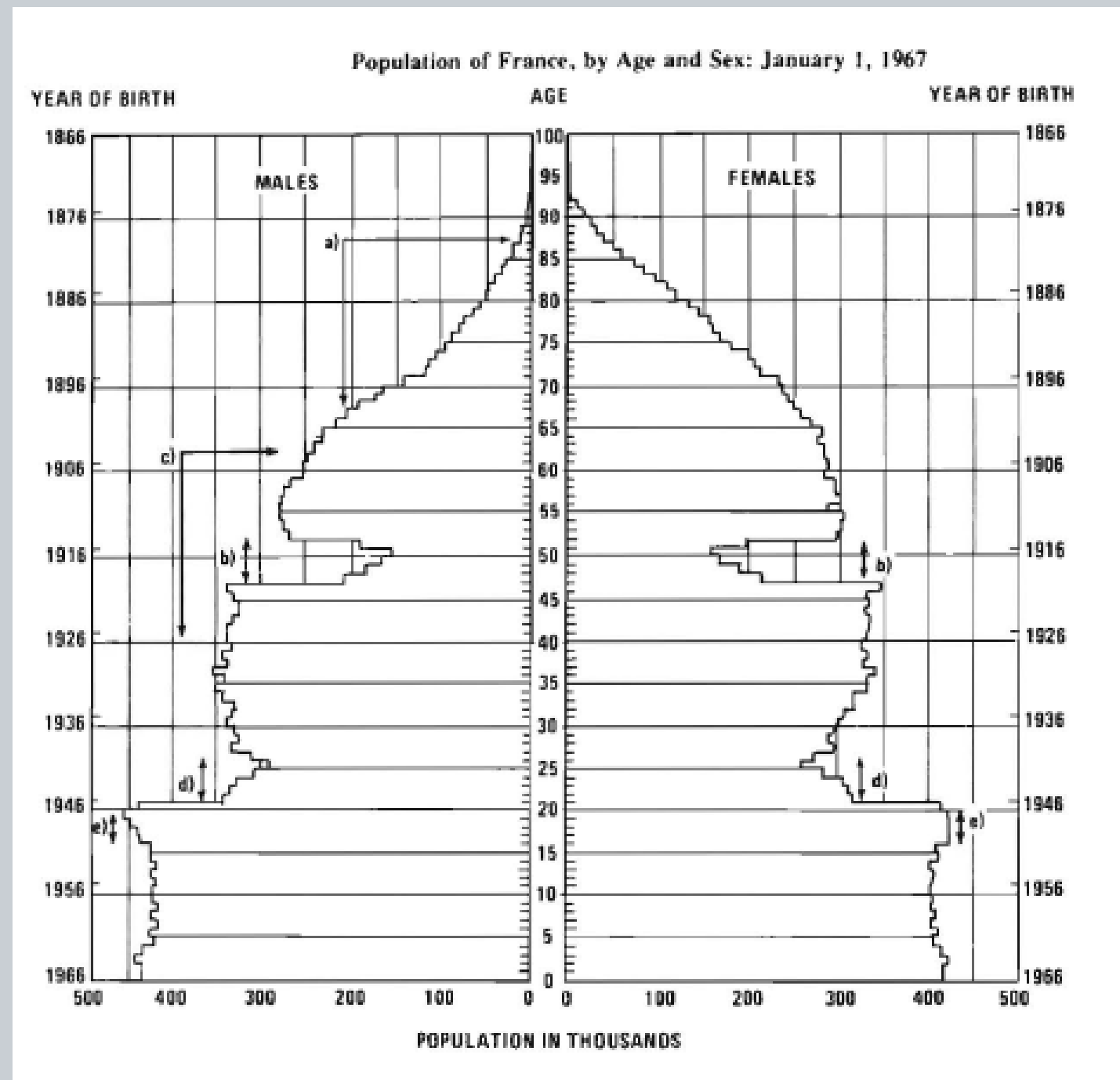
MOIRÉ VIBRATION



".JASA Style Sheet," *Journal of the American Statistical Association*,
71 (March 1976), 260-261, from Tufte (2007).



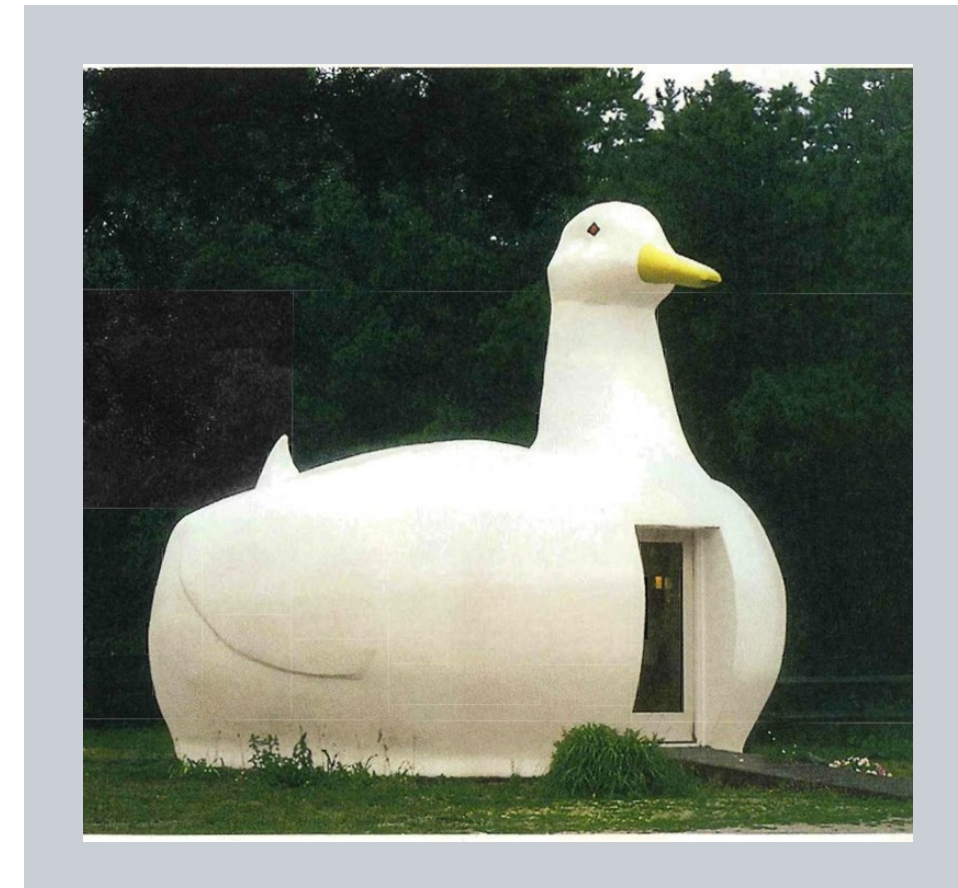
THE GRID



From Tufte (2007).

THE DUCK

- redundant data ink added for graphical decoration that results in “self-promoting graphical duck”
- A graph becomes a duck “when the overall design purveys Graphical Style rather than quantitative information”.



From Tufte (2007).

AN EXAMPLE OF A GRAPHICAL DUCK

