

The Mind Is Not a Camera, The Brain Is Not a VCR

Some **psychological guidelines** for designing charts and graphs

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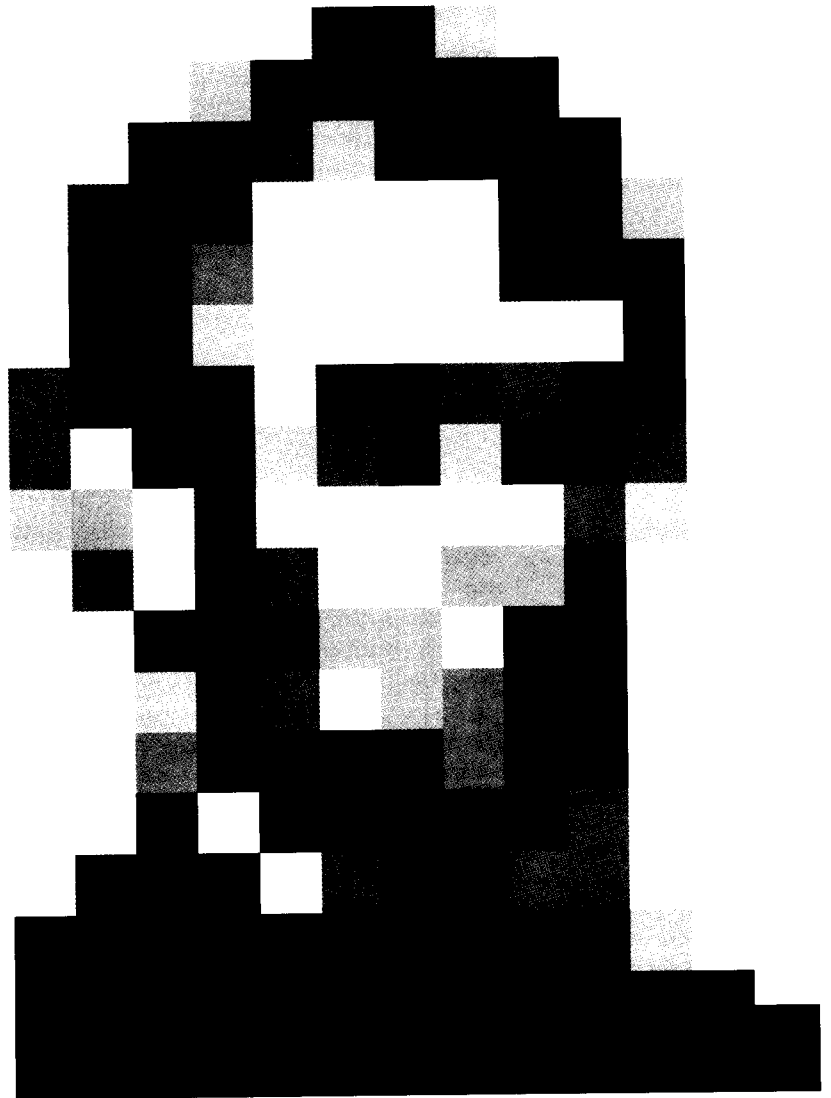
The emblem of the information age is the information graphic. The use of snappy color charts and graphs in newsmagazines, an innovation often ascribed to *Time* magazine's Nigel Holmes, has spread to special-interest magazines, journals, national newspapers (*USA Today* and a host of imitators), local dailies, television news, even Ross Perot's "infomercials" and Jay Leno's sketches. This accelerating trend has been fueled in the past decade by technological developments such as PostScript, desktop publishing, color prepress, and graphical user interfaces. Today, more than anything else, the multicolor bar graph is a symbol of a publication's membership in the big leagues.

If you catch a designer or editor in a moment of candor and ask why he uses information graphics, you might hear him admit to simply following the fashion of the day. More likely, though, you'll hear one or more of these answers: Infographics are eye-catching, they have "instant impact," they simplify complex ideas, they give information an aura of "scientific" credibility, they are easier to digest, or that a picture is worth a thousand words (and usually takes up less space).

In fact, the Chinese adage places a value of *ten* thousand words on a single picture, but it does not take great insight to realize that only a well-drawn picture is truly worth its ink in words. After all, text has proven its power to express ideas over several millennia, whereas the modern information graphic was invented about two centuries ago, and its full possibilities have yet to be realized. At times, our prodigious ability to produce attractive graphics outstrips our knowledge of how to design and use them well. The result is a glut of beautiful ciphers—incomprehensible images clogging the information stream and *impairing* our understanding of the world and the issues that matter to us.

Some ways of preventing the medium from obscuring the message can be found in experimental psychology, the scientific study of perception, memory, and thought. The experimental approach to understanding behavior is a multifaceted enterprise, but some of its findings can be distilled into principles that are easy to understand and can be applied to your own work every time you set out to produce a new infographic—whether it is a chart, graph, map, diagram, table, or any other visual display of information.

Some of these recommendations will seem intuitive



Why is this image easier to make out when it's blurred? See the section on "Texture channels," on page 37.

and commonsensical, whereas others may strike you as a bit strange until you see them demonstrated and use them yourself. Let's focus on what may be the most common misconception in infographic design, the idea that the human mind is a passive recorder of what it sees, a sort of information sponge that simply soaks up whatever we show it—once we have grabbed its attention in the first place, of course. This is simply wrong.