

Don Gayton

One of the great challenges of writing—and editing—a scientific paper is finding the right balance between *methods* and *results*. These two elements are the intertwined *Yin* and *Yang* of communicating science. Each depends on the other. An overly brief and sketchy methods section throws doubt on the validity of the results. At the other extreme, too much technical detail and discipline-specific jargon in the *methods* section will drive readers away before they get to the *results*. Certainly other parts of an article are important, but methods and results stand at the very core of the document. They must each be carefully weighted with reference to each other, so the article finds the sweet spot between detail and readability. I wish there was a magic formula for achieving this balance, but the world of science and science writing is far too complex for a cookbook formula to be of any use.

The other key element of a scientific paper is its figures—graphs, tables, maps, and photos. With the advent of digital publishing, photos, and maps have suddenly come alive, with full colour photos, slick overlays and high-resolution satellite imagery. But for me, the essence of a scientific paper is the graph. One good graph is worth a thousand words. In fact, the human brain seems to embrace visual information much more firmly than the same information conveyed verbally.

I am a great fan of Edward Tufte, who has been described as “the Galileo of scientific graphics.” In his book *The Visual Display of Quantitative Information* (www.edwardtufte.com) he urges us to look closely at how we present our graphs and to get rid of extraneous and distracting “chartjunk.” Tufte’s books are full of examples of truly excellent (and truly terrible) graphs, reaching back into history and forward to the present day. Tufte is surely the poet of the graph.

The writer of the scientific journal article has an enormous challenge. He or she must synthesize months, years, or even decades worth of work into a comprehensive, well-referenced, and highly condensed article and then submit to the often humiliating rigors of peer review. If the paper is co-authored, and most are nowadays, then the complexity increases yet again. Often in the protracted process of getting an article published, the ultimate target of that paper—the reader—gets ignored. So this is your Editor’s plea for great writing and great graphs, along with great science.

