I am grateful to Mr. Cox for his meticulous review. I am afraid, however, that he appears to have missed the main point of the book. To say the "organisation into chapters often seems arbitrary" shows that he may not have realized that the chapters in Part I (the major part the book) are named after classes in a computer program; they are arranged according to the flow of their execution. Figure 2.2 diagrams this flow. This strict order cannot be changed without producing nonsensical results.

Yes, Springer gave me free rein to write the book I wanted because it is the first of its kind. This is not a textbook. It does not Wikipedize (that's a verb) the received wisdom of a field called statistical graphics. It does not recapitulate my published papers. It is not a user manual for SYSTAT or some other computer graphics package. Although I am flattered to be placed on a bookshelf alongside the works of Tukey, Cleveland, Tufte, and Wainer, that is the wrong bookshelf.

The Grammar of Graphics is the first of its kind because it is the only book whose author wrote the visualization software, wrote the script that produced each figure from this software, typeset the final manuscript, and helped Springer develop the first production book plates ever made from color PDF files. I mention these facts for the first time because they give a context to the details. This is why there is no existing graphics package that can draw all the graphs in this book.

Cox's "Golden Age" was (and still is, for some) a time when statistical graphics were figures on a page or computer screen. Producing printed graphics or using interactive versions of them to explore data required a user with the skills of John Tukey or Bill Cleveland. Those are the skills many of us have tried to teach our graduate students. *The Grammar of Graphics* has, as modern computer designers say, a different *use-case*. Let me give a few stories to illustrate what I mean. I express these stories through a verbal user interface because engineers have reached the technical feasibility of doing that.

1. "Here are some data. Please analyze these data and show me the kind of interesting things Tukey or Cleveland would find."

2. "Here are some published charts. Please extract the data from them and show me some other charts that reveal things I cannot see in these."

3. "Here is a published table of results from a factorial experiment. Please fit a plausible subset model to these data and show me a graph of the residuals in each cell of a similarly formatted table."

4. "Here are the dates, temperatures, divisions, and coordinates of Napoleon's march to and retreat from Moscow. Draw Minard's map."

These examples show that *The Grammar of Graphics* does not live in Cox's "Golden Age." One cannot implement these scenarios in the architectures of computer programs like SYSTAT, SPSS, SAS, Stata, Minitab, R, Matlab, or Mathematica. And one will not find these scenarios in the books Cox cites. A

few readers of the first edition realized *The Grammar of Graphics* was pointing toward the kind of visualization environment we see in the movie *Minority Report.* My team of colleagues is well on the way toward building a software foundation for this new world of visual analytics.

Finally, details. Let me conclude by correcting a few of Mr. Cox's mistakes. Following his advice, you may want to read this paragraph as if it were from a novel like *Tristram Shandy* or *Ulysses.* My colleagues were not on the cover because they were contributors, not coauthors; I credited them extensively in the Preface. The proper aspect ratio for a graph is a relatively recent discovery (by Cleveland, through randomized experimentation); Fisher, Tufte, and other armchair speculators on this topic were wrong. The mathematics in the book are not advanced; I began with elementary definitions because many writers on graphics have misused terms such as *graph*, *space*, *mapping*, and *topology* or have tried to turn them into metaphors. GPL is indeed Graphics Production Language; there is a free Web Service for using the language at `http://www.spss.com/visualization/services/` (email me for help in using it); also, email me suggestions for getting marketing people to talk to me. *The Grammar of Graphics* is decidedly not a book of virtues; for a sense of what I regard as graphically virtuous, read my manuals to SYSTAT; I am as interested in analyzing how to produce a 3D pie chart as I am in producing a trellis; I am glad Mr. Cox regards some of the figures in the book as perverse; I expressed such a hope in the Introduction. I yield to a geographer on his points about maps; my comment on Peters was unfortunately comparative, not absolute; the Peters projection was devised to give the Southern Hemisphere its fair share. Some of the weird Coordinates chapter charts have never been seen before; I leave it to others to decide on their usefulness, but the statistical graphics world has not even begun to explore this universe. It is easy to define gamma with a single parameter; I just did. Shame on me for leaving out the exponents in the variance formula. I did not lie on page 12; the graph was produced to make a point, as I stated in the text. Double axes are indeed problematic, unless one uses color to distinguish them as I did in the figure. "Eponomy" is a misspelling (although a linguistically intriguing one); "diladic" is proper usage; "dilatation" and "dilation" mean different things and are used appropriately in the text; a "nemesis" is one's worst antagonist; "comprised of" and "compared to" are proper. Cox's other minor corrections are welcome. Finally, for the explanation of Philadelphia, I refer Mr. Cox to the Cockney-American comedian W.C. Fields.

Having said all this, I want to conclude by thanking Mr. Cox. One learns more from thoughtful critics than from acolytes.

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