

December 2002: Listen to, and Heed the Advice of Experts in the Field (Rule 8.12)

Rules of the month are numbered in accordance with the numbering in the book. Thus, Rule 1.1 refers to the first rule in Chapter 1. And so on. These comments do not repeat the material in the book but highlights and amplifies it. A rule is stated as found in the book and then discussed.

Rule 8.12 “Listen to, and Heed the Advice of Experts in the Field.”

Further Comments on the Rule

I gave one of the December 2002 Deming Workshops in Atlantic City. The workshop participants gave lots of advice and their own rules of thumb. Here is a summary of some of their comments—most of which dealt with graphical display of data. For ease of reference I have numbered the comments.

1. Begin with graphing the data, and graph the data several ways, staying as close as possible to the raw data.
2. For internal reports (say a pharmaceutical firm internal study report) all graphs should have corresponding tables. This appeared a bit strong to the participants and they suggested that all the points in a graph should be referenced as a tabular value somewhere. It may thus be that two figures are based on the same table or vice versa.
3. Color in graphs may often be successfully represented by shades of gray. This suggestion, as well as others below, came from Naomi B. Robbins of N.B.R. Consulting--see below.
4. Keep row labels in tables close to the numbers to facilitate reading across lines.
5. At the seminar, I referenced a paper by Gelman et al. (2002) that demonstrated the effectiveness of graphs in displaying complex relationships (Rule 7.1 in the text). The authors took the March 2001 issue of the *Journal of the American Statistical Association* and showed how many of the tables in that issue could be more usefully represented as graphs. This paper is worth reading. It has many good suggestions.
6. Naomi Robbins conducts hour, day, and two-day workshops on recognizing deceptive and misleading graphs, creating more effective graphs, and constructing better charts with Excel. See her website for specific details: www.nbr-graphs.com. She also referenced a website providing advice on color combinations in graphs: www.colorbrewer.com. In addition, she referenced the *Information Design Journal* as a good source for designing effective graphics.

References

Gelman, A., Pasarica, C. and Dohdia, R. (2002). Let's practice what we preach: Turning tables into graphs. *The American Statistician*, **56**: 121-130.