Comment

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Professor Chatfield provides a compendium of *experiences* in statistical endeavors. He emphasizes tribulations—how to anticipate and, if possible, to avoid pitfalls—but also how to minimize damage in the event of complications or miscues, by oneself or others. An analogy in terms of traffic accidents would be to teach "defensive driving" that avoids accidents, but also to design cars, from basic frame to special safety equipment, that will protect occupants from injury when a car fails to avoid accidents. Yet driving can be fun, too.

Working well with data, and with other people, is quite different from the "theory and methods" (and computing) in most textbooks and courses for Ph.D. programs in statistics. I wish that someone had shared such perspectives with me when I was a graduate student 25 years ago. OK, I confess that wise and kind teachers *did* tell me the pitfalls of statistical consulting and collaboration. I just did not understand or heed my experienced teachers and colleagues, although they persevered with me, trying to make my education useful, even after I had begun to teach myself. At least I can appreciate my benefactors in hindsight; and I still can benefit from advice that several of them subsequently published.

Now, reading Professor Chatfield's advice, with dramatic descriptions and examples of statistical work, I have been tempted to rummage through my own experiences to find case histories that are as stunning or as ludicrous as his. Instead, I offer several responses that neither compete nor disagree with him.

First, exploring data is *fun*. Chatfield's litany is rather daunting. But I *enjoy* sharing the interests of "clients" or collaborators—and I bet that Professor Chatfield does, too.

Second, my own years of resistance to learning from experiences of other statisticians make me pessimistic about whether readers will be able to benefit from Chatfield's thorough and lucid exposition, or from my own observations, or from any "pitfalls" education.

Third, I believe that universities generally fail to reward statisticians for the breadth and depth of activities that Professor Chatfield advocates. In particular, university programs in statistics discourage faculty and students from absorbing and practicing his lessons.

My mentors 20 or 25 years ago had statistical experiences before they came to—or created—departments of statistics. They remained involved in projects or careers (academic and otherwise) in agriculture, anatomy, medicine, psychology, economics, geography, geology, engineering, law or other disciplines that use data.

In the past two decades, statisticians have developed elegant new probability theory—for point processes, record values, saddlepoint approximations, Chen-Stein methods for Poisson approximation, etc. Other inherently elegant statistical innovations now have been made practical by cheap, powerful computing: I note the advent of generalized linear models (for classical, logistic and contingency table analyses); bootstrap and re-sampling methods; density estimation and curve smoothing; interactive graphics; and so on.

Yet, during the same period, efforts to focus on "pitfalls" or to give "consulting" a distinct slot in the statistics curriculum implicitly acknowledge that *many statisticians no longer are immersed in substantive issues that require quantitative evidence and inference.*

Variants of "the ten commandments of statistical inference" can be stated in less than a hundred words (Driscoll, 1977). Other dozens or hundreds of longer articles incessantly admonish statisticians and others to do better with "real" data. Statistical consulting bibliographies have been compiled. Books have been published (Boen and Zahn, 1982; Hand and Everitt, 1987; Chatfield, 1988). And now also video tapes are used to teach consulting.

What is the problem? Why do we still need Chatfield's advice about avoiding pitfalls?

In contemporary statistics departments, many university professors and students ornament previous statistical theory or methods with baroque and rococo variations that may stretch the frontiers of mathematics or of computing, but not of real data analysis. Such work may involve data for illustrations—or to motivate funding—but not out of in-

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