

LEO BREIMAN

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Statistics is a uniquely difficult field to convey to the uninitiated. It sits astride the abstract and the concrete, the theoretical and the applied. It has a mathematical flavor and yet it is not simply a branch of mathematics. Its core problems blend into those of the disciplines that probe into the nature of intelligence and thought, in particular philosophy, psychology and artificial intelligence. Debates over foundational issues have waxed and waned, but the field has not yet arrived at a single foundational perspective.

Given these complexities it might seem surprising that human beings could have definite opinions about core issues in statistics, and surprising that working in such a field could be pleasurable. And yet there was Leo Breiman, who had his definite opinions about statistics and who took great pleasure in waking up every morning to see what more he could do to bring the field along.

To the extent that most statisticians have a vision about the final conclusive form the field might take, I suspect that this vision is a mathematical one—a set of core definitions, axioms and theorems. Moreover, I think that many statisticians will expect for these mathematical ideas to involve a set of optimality principles, such that it will be possible for a user of statistics circa 2500 AD to dial in the description of a problem and out will pop the optimal procedure.

I think that Leo had come to a different vision. In thinking about Leo I think about the box of tools in my basement. It contains hammers, screwdrivers, pliers, nails, screws and rivets. Of the infinite number of possible physical forms that objects for manipulating the physical world could have taken, these are the ones that have come to us from our ancestors in the applied field of “management of uncertainty in physical structures.” They arose via little bits of human genius and they have stood the test of time.

My vision of Leo’s vision is, of course, an inference, and to support my inference I will exhibit some of the (anecdotal) data on which it is based.

- I first met Leo at a conference where I found myself at a lunch table with Leo and Jerry Friedman. Leo initiated the lunchtime conversation as follows: “Jerry, what do you think about nearest neighbor?” An outsider might have naively thought that “nearest neighbor” was some recent fad, but of course Leo (and Jerry) had been thinking about nearest neighbor for decades. Leo simply wanted