

## EXTRACT FROM 'THINKING FOR OURSELVES' by Mike Disney

CHAPT 11 on Statistics:

### (11:8) AN ASIDE TO THE ANGRY READER

I expect some readers will find the criticism of Statistics here expressed incredible. I couldn't blame them; I've had otherwise courteous colleagues storm out of the room when I've dared to express them. How could anyone sane question principles adhered to by so many famous minds over the course of the last century? To them it is spitting in the face of Logic, befouling the very altar of the Scientific Revolution. Worse still, so they imagine, it is calling into question their own principles of thought on which their ideas and their reputations are founded. They no more want to hear doubts about those fundamental principles than ayatollahs want to hear criticisms of their God.

We'll return to the Wars of Thought in Chapter 14 "The Extraordinary History of Thinking" but I wanted to say just enough here to try and stay the reader's inclination to throw this book at the wall.

First of all *it's not me*, it's not some private rant. Anyone who digs deeply enough into the specialised literature will find far harsher criticisms expressed by this expert statistician or that. For instance here is Professor Edwin Jaynes, doyenne of the Objective Bayesian School (with an agenda of his own) recently criticizing, by turn, the previous Popes of American (Neyman) and British (Fisher) Statistics:

"Neyman, not a scientist but a mathematician, tried to claim that his methods were entirely deductive. For example in 1952 he states '...in the ordinary procedure of statistical estimation there is no phase corresponding to the description of "inductive reasoning".....all the reasoning is deductive and leads to certain formulae and their properties.....'...".

Then: "Fisher, possessed of a colossal, overbearing ego, thrashed about in the field, attacking the work of everyone else with equal ferocity. Somehow, early in life, Fisher's mind became captured by the dogma that by 'probability' one is allowed to mean only

limiting frequency in a random experiment.....his later dominance of the field derives less from technical work than from his flamboyant personal style and the worldly power that went with his official position, in charge of many students and subordinates.”

[“Probability Theory. The Logic of Science” 2003, Jaynes E.T., CUP, pp 494 to 499].

But the paper that really made me wonder about the whole Statistical mess was written in 1991 by Colin Howson and Peter Urbach, two philosophers at The London School of Economics . They demonstrated by means of simple examples that conventional statisticians could arrive at contrary conclusions simply by making apparently harmless assumptions about how they binned their data or stopped their analyses. They said: “This dependence of significance tests and confidence interval estimates on the subjective, possibly unconscious intentions of the experimenter is an astounding thing to discover in the heart of supposedly objective methodologies.” And they were right; absolutely right. It was time to question the whole enterprise. As outsiders Howson and Urbach didn’t have an axe to grind. And that’s very important. Insiders are seldom able to see the blemishes in their own systems of thought. Such systems have to be seen and attacked from outside. The geologists did everything they could to ridicule Wegener ( a meteorologist) and his mad idea of Continental Drift while it took physicists to show up Psycho-analysis for the nonsense it is.....

Your author, I’m bound to admit, has been by turn a Mathematics groupie, a naive Frequentist, a Popperite, a recidivist Baconian, a Crypto-Frequentist, an undercover Bayesian, a proud Objective Bayesian, a chastened apostate from that same currently fashionable school, a Subjective Bayesian — but all along an ardent but confused pilgrim after truth. At the end of his long pilgrimage all that remains is Common Sense. Yes, it’s hard, it’s very hard indeed because we’re all trying to peer into minds, our own minds, forged by Evolution tinkering with our genes, crisis by crisis, over uncountable generations. We needn’t feel ashamed of being confused; on the contrary: “*Men are born ignorant, not stupid. They are made stupid by Education*” so Bertrand Russell maintained,

very applicable in this topic. The next section of this chapter will, I hope, convince the reader of just how hard thinking can sometimes be.