"THE SHORTCOMINGS OF THE SCIENTIFIC METHOD"

Science describes a certain attitude of man towards Nature. Its results depend on the terms used, the questions asked and the methods employed. These are not in themselves objects of science, but of philosophy. Modern natural science could only develop as a result of the so-called "rationalistic" philosophies. Its successes and at the same time its problems are due to momentous confusion of primary and secondary requirement of cognition. Somewhere between my B.S and Ph.D I began to suspect that something was missing from science. I sensed a huge gap between the "map" and the "territory". I came to realize that biological models where not only mechanical and lifeless but were not gentle, delicate, balanced, and diversely beautiful. Science has captured the essence but has missed the subtle. Unfortunately, we scientists have trouble stepping out of our own cultures and our own personae. We, scientists, see what we expect to see. Facts come clothed in history, colored by context. Our values, beliefs, expectations, attitudes and philosophies greatly influence what we are actually able to see or hear - we are a product of a patriarchal culture detached from Nature. It is impossible to be sentient, conscious and unbiased. Our very choice of research topics and our way of approaching them are biased by our background, tastes and interests. As such there is no such thing as "objectivity". Science is less a statement of truth than a running argument. And today, science is so politically and financially motivated that its conclusions are carrying no more weight than any other interest or religious group.

Many authors publish and perish. Fraud is the national past time in many laboratories and even government health institutions. Science is censored at all levels of hierarchy. Ideology and plain prejudices influence which studies get published while at the same time junk science abounds so (that) often the Supreme Court of the land has to use a cleaver to separate the eccentric from the heretical. Many authors use a plethora of their own papers as citations so that the value of citation statistic (as gathered by ISI) is highly questionable. Consensus among many scientists is no guarantee against major

errors in thinking. Suppression of the opinions of scientists with strongly held idiosyncratic points of view is profoundly anti-scientific. Feyerabend's skepticism with science is well documented in his two famous books, "Science in a Free Society" and "Farewell to Reason". Both are worth reading for your psychiatrist friend and point toward the fact that scientists, without exception, uncritically accept "paradigms" that guide their research.

We scientists often view "hard" science as the only type of science. But scientia - "knowledge" is something much more general and is not always defined by decimal places and double-blind controlled experiments. Soft sciences explain and predict (gain knowledge of) natural phenomena by continually testing theories against empirical evidence. "Soft" sciences included in hard sciences can't be started or stopped whenever it is convenient. The zest for life can't be measured. Love is a many splendored thing with umpteen variables we can't control. Often we are even at a loss as to what the variable is!

Recently the notion has emerged that numerical models can be "verified" or "validated" and sophisticated techniques have been developed for this purpose. The word "verify" comes from the Latin "verus" meaning "true". However it is impossible to demonstrate the truth of any proposition except in a closed system - straight from the mouth of symbolic logic law. Models require input parameters that are incompletely known and observation and measurements of both independent and dependent variables are laden with inference and assumptions - known as "auxiliary hypothesis" so that if the verification fails there is often no simple way to know whether the principal hypothesis or some auxiliary hypothesis is at fault. As long as small inputs, minor initial perturbation have extrapolated effects on outcomes, the primary value of models remains heuristic - useful as a guide but a long way from proof.

I strenuously object to the implication that alternative medicine is somehow a virulent rejection of science. It is, rather, a violent rejection of the financial and, on a larger scope, economic

incentives that determine the direction as well as the usage of scientific information. Alternative doctors no longer worship science as the 'all-knowing" because, unfortunately, the scientific method that brought us "to the moon, Alice" has lowered itself to the level of a common belief system, riddled with fraud, fabrication, predjudism, errors - complete with mudslinging worthy of political election tactics and multi-media advertising. Orthodox practitioners have lost their curious, innocent common sense and are far more troublesome, expensive and unhealthy than the problems they are supposedly solving.

I. P. P. O. T. A - Inverted Pyramidal Proliferation of Theoretical Assumptions - is infinitely worse than any virus that has ever plagued the computer industry and E.x. p. e. r. t. s - are nothing more than Egocentric Xenolithocapitus Paleolithic Effluvium with Rhetorical Thrum - roughly translated as - self-centered rock heads with stone-age reasoning giving off an offensive smell, spouting meaningless, monotonous sounds.

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