EDITORIAL

LIFE IS MORE THAN SIMPLE INTEGERS!

A review of the chronicles of rational man strongly suggests that he has used and is using the observations of concrete demonstrable facts in order to understand the abstract and unattainable. One needs only to look around oneself to see that such a procedure is successful. However, the question arises: "How successful is successful?" Can the physical world be accurately characterized by simple linear or curvilinear functions of positive integers? What are the consequences to one's understanding of reality if one does not look beyond the success of these integral functions? For many there is no need to look beyond the aura of scientific success, because to do so would be iconoclastic.

One of the greatest strengths of science is found in its ability to take observations of the physical world and construct working models of the phenomenon under study. From these models the scientist is then able to predict the outcome of additional experiments. Herein also lies one of the greatest limitations of science. When the scientist has limited observations of past non-repeatable events, the strength of the scientific method is virtually neutralized, leaving little more than speculation.

When such limitations of observation and experimentation exist, the scientist is compelled to make clarifying assumptions and develop a model based upon approximately similar processes that can be studied. In so doing the scientist is attempting to move away from speculation and closer to reality. When confronted with a new situation or problem the scientist will usually search for something familiar from which to begin his or her inquiry.

In moving from the known and testable to the unknown and untestable, one automatically turns to natural observable processes for insight. Very seldom, if ever, does one automatically turn to the supernatural or divine for answers. To do so for every unanswered question would by definition be unscientific and, if carried to excess, could lead to a return to the Dark Ages. This does not, however, exclude divine processes from occurring, nor does it render unscientific that kind of research which carefully includes divine intervention. Whether one includes or excludes divine intervention depends almost entirely upon one's personal philosophy and convictions.

The conclusions drawn from research, especially in the untestable areas, are heavily influenced by the assumptions used to conduct the studies. Logically, it is reasonable to maintain that the conclusions drawn

and the theories proposed from such research are also influenced by one's personal philosophies and convictions.

A great potential for misunderstanding exists when scientists and laymen, of differing philosophies and convictions, fail to recognize that these hypotheses and theories are based upon assumptions and simplified models, and may not accurately represent reality. Furthermore, these reflections of reality from the models may include a bias derived from the personal viewpoints of the investigator. Let me illustrate. Two investigators obtain the following data and are asked to develop a model: 720, 2.00, 4.00, 9.92, 6.00, 8.00, 13.92, 10.00, 12.00 and 734.0. After careful analysis of the data the first investigator decides that some of the data is invalid and rejects 720, 9.92, 13.92 and 734. He reasons that the two large numbers are at the extremes of measurement and therefore can be discarded on grounds of imprecision, while the other two data points can be rejected on the basis of random noise. In so doing the first investigator develops the model $F_{(n)} = 2n$ where n is the set of positive integers. The second investigator does not feel justified in eliminating any of the data and consequently develops the model $F_{(n)} = 2n + (n-1)(n-2)(n-3)(n-4)(n-5)(n-6)$, where n is the set of numbers from 0 to ∞ in steps of 0.5, with some data points missing.

Which model is incorrect? In reality both models are correct! The model of the first investigator merely describes a subset of the model of the second investigator. The dominant difference between the two models is found in the assumptions of the investigators.

In the pursuit for knowledge and truth, one should not force all answers to come from one model. Where multiple models exist, examine the differences and then strive to find the harmony between them. Truth is multifaceted and presumably includes more than whole integers. Regardless, truth will withstand the test of time!

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