

Please Judge Me First by the Questions I Ask

By Mark White, MD
Copyright 2008, Rafiki, Inc.

I had the strange good fortune one time to find the answer to a question that I hadn't really asked. The experience should be familiar to any practiced and accomplished scientist. It is a phenomenon that might prompt one to shout, eureka! A strange little word that literally means, "I have found it." In this case I had found a really good answer in search of a much better question. What inevitably followed, as any practiced scientist knows, is a flood of many more related questions.

Since this funny experience of mine I have spent many years trying to persuade people of my many clever and detailed answers only to find that they categorically reject my questions. Herein lies the rub; if one merely wants answers, the quality of accepted answers entirely depends on the questions to be accepted on the grounds that they are deemed valid and useful. We might go so far as to induce a general law of answers from this. It might even somehow be possible to judge the quality of any particular answer less on the questions it answers and more by the questions it allows. Perhaps this approach would better preserve the spirit of discovery that is ostensibly the life force of all science.

Regardless, I have assembled a short list of questions that have logically followed from my seminal eureka moment. I have labored mightily to answer, or at least offer an honest effort to answer these many questions. The answers are invariably rejected perhaps not as wrong but simply as useless. The challenge then, perhaps, is not to see the utility of any one question and its logically correct answer but the relationship between all questions and answers together. The task then becomes one where we attempt to find the common threads that can bind the questions and answers into a coherent whole. It is a bit like an impressionist painting where each question and each answer individually is a colorful dot, but as a whole they paint a different picture entirely.

Please read through the list of questions, and at least try to make it through to the end without the obligatory feelings of "this is absurd." See how many questions you feel that you can comfortably and easily answer. See how many questions you feel are actually valid and useful. At the end I will share with you my eureka moment, and then I ask that read through the questions again to see if they somehow change in significance, meaning, and their general relationship to one another.

What is knowledge?
What is science?
What is a theory?
What is a model?
What is a correct answer?

What is a molecule?
What is a protein?
What is DNA?
What is a language?
What is information?
What is molecular information?
What is life?
What is evolution?
What is the genetic code?
What is a codon table?
What is a codon?
What is “the best possible” codon table?
What is the shape of DNA?
What is a double helix?
What is a dodecahedron? (This question is much more difficult than you probably realize. Read it again and see if you still like your first answer.)
What is symmetry?
Can a language have a shape?
Is the genetic code a language?
What is the shape of the genetic code?
Is there any relationship between the shape of DNA and the shape of the genetic code?
How many dimensions of information does the genetic code include?
What is a silent mutation?
Must silent mutations always be silent?
What is the origin of the genetic code?
Has the genetic code changed since its first appearance on earth?
In what ways has the genetic code changed and not changed since its first appearance?
How many variations of the genetic code exist today?
What are the similarities and differences between variations of the genetic code?
What accounts for the variations, their similarities and differences?
What role does time play in the genetic code?
What role does space play in the genetic code?
If life exists on other planets, must it have a genetic code?
What similarities must exist between life on various planets with respect to their genetic codes?
Given an earth without life, how many classes of unique scenarios might we imagine that could lead to our current genetic code?
What is mathematics?
How is or how is not mathematics a language?
What is a number line?
How many unique number lines might we imagine?
What is logic?
What is the relationship between logic and mathematics?
Do molecules obey logic?
How is molecular logic the same or different from other forms of familiar logic?
How are molecular life and mathematics alike and unlike?

What is the basic relationship between time and information within life?
 Is the relationship between time and information fractal, or does it change depending on the scale of observation?
 Is the relationship between time and information for molecular life the same as or different from molecular non-life?
 What is the relationship between language and information?
 What is the role of symmetry in life, logic and language?
 Do minerals form on earth according to a code or language?
 How does a mineral code differ from the genetic code?

*And now for my eureka moment. (Don't forget to read the questions again.)

