

CHAPTER 5

MESSAGE OF THE MOLECULES

Question: When is the whole greater than the sum of its parts?

Answer: When one buys a doughnut.

As a child I routinely destroyed my mechanical toys: windup airplanes, automobiles, railroad engines, many of which emitted sparks and sounds, and moved. I just had to see what was inside these marvelous devices. After peeling away the thin layers of metal, I was invariably confronted with jumbles of springs, gears and many unrecognizable objects. My toys lay in ruin, and I was no wiser.

Many useful objects lose their function when they are dismantled. This is true of cars, radios, airplanes, refrigerators, pianos and essentially all manufactured goods. Obviously, appliances function only when completely assembled. The creation of these devices requires planning and execution. Piling microchips, capacitors and resistors into a heap usually yields only a garbage dump instead of some useful electronic equipment.

ACQUISITION OF NEW FUNCTION WITH ORGANIZATION IS THE WAY OUR WORLD IS PUT TOGETHER

The world is made from approximately one hundred different elements, such as carbon, iron and oxygen. The differences among elements are due to the number and arrangement of the protons and neutrons in the nucleus, and electrons in the outer regions of the atom. Although the properties of individual electrons are identical in every element, their differing combinations give a variety of chemical properties to the elements. But, as elements combine to form compounds, their unique properties frequently give way to new characteristics. For instance, inert white table salt emerges from combining the greenish corrosive gas chlorine with the soft metallic, highly reactive sodium.

Linking hundreds of left-handed amino acids into polypeptide chains results in a most impressive variety of proteins. Thousands of different proteins function as molecular machines, each promoting a unique chemical change. Other proteins support biological structures, forming such diverse substances as tooth dentin or muscle fibers.

Living matter consists of a mix of molecular machines that propel synchronized chain reactions. These enable life processes to occur in the cells. In multicellular organisms the work of one cell complements others. Living organisms interact in various ecosystems to form the biosphere that covers the globe. The Earth receives its energy supply from the sun, and solar energy drives most biological systems directly or indirectly. When the lowly *E. coli* utilizes the energy of glucose molecules, this energy originates from an atomic furnace, millions of degrees hot, some 93 million miles away.

The layers of our reality are successively more complex domains (Figure 5.1). A logical way to account for the appearance of new functions at each level of increased complexity is to suppose that the

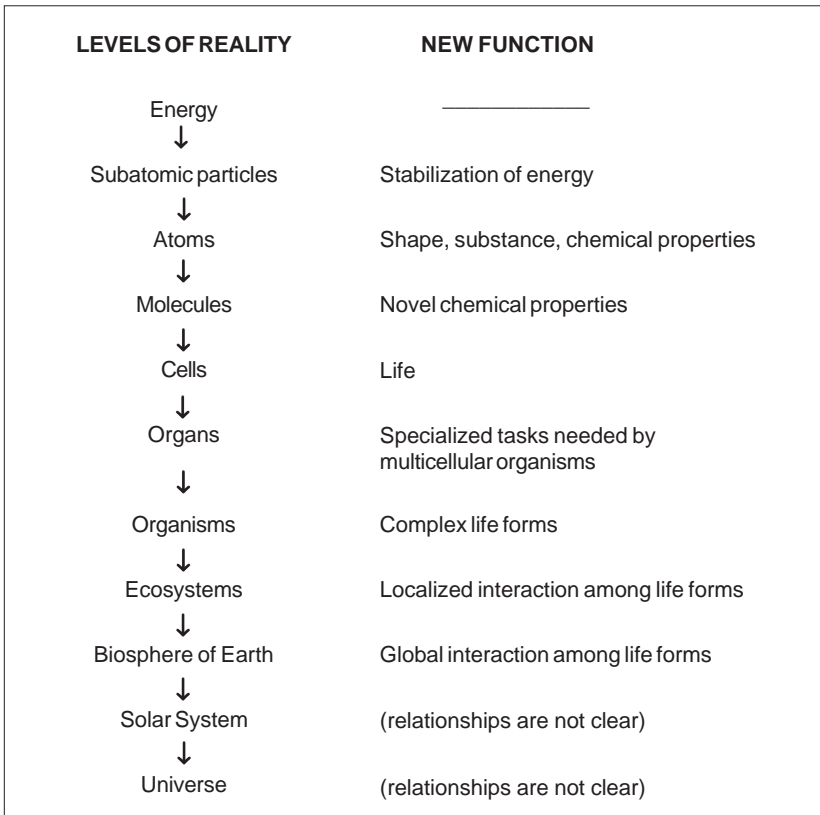


FIGURE 5.1. Reality is organized into increased levels of complexity.

Universe is here by design. Living organisms fit remarkably well into this hierarchical order of reality. It is tempting to adopt a “biocentric” view which would propose that reality was designed for the sake of living organisms.

We attempted to show that living matter cannot possibly spring into existence spontaneously under any circumstance. This is not an argument from ignorance. Theoretically we know what would be required for living processes to commence. **Chemical evolution requires random processes to accomplish that which we are unable to do in the laboratory!** Since there are no selection processes to favor components of a “future” biological system, any appeal to random processes, even if an infinite amount of time were available, is futile.

As matters stand, rejection of the concept of the Creator leaves the naturalistic scientist with the alternative of not knowing where life came from. Usually scientists are comfortable living with uncertainty. In fact, curiosity of the unknown is a chief motivator of scientists. When research uncovers an explanation for a scientific problem, the scientist frequently moves to another area of work, looking for new challenges.

But the question of life’s origin is not just another scientific problem. It undergirds all other human enterprise. If we do not know how life originated, we do not know whether there is a purpose to existence, or whether we are all just participating in an interesting fluke of nature. While scientists have a high tolerance for the unknown, they have low tolerance for meaninglessness. Science is, after all, foremost a search for meaning in nature. It would seem incongruent that so much meaning can be found in nature at the levels on which scientists operate, but the sum total of existence turns out to be meaningless!

Perhaps it is insulting to designate as meaningless the faith of those who believe in the evolution of matter from gaseous nebulae into highly structured biological entities. These evolutionists are awed by the sophistication seen in the biological world and continue to be challenged to gain a better understanding of it. They also take comfort in the apparent kinship between different forms of living matter, and they work diligently toward understanding their phylogenetic relationships. Perhaps it is more accurate to recognize naturalistic scientists as worshipers of nature, modern descendants of the worshipers of objects and of natural manifestations of ancient times.

For these students of nature, science represents rational, logical thinking; and the notion of Supernatural represents the opposite —

irrationality, magic and a return to the pre-scientific age. Indeed, much intellectual mischief has been committed in the past under the guise of religion. However, as was seen in the previous discussion, **the phenomenon of life on Earth cannot be convincingly explained without invoking the work of a supernatural Creator.** The necessity of a Creator is not a plea for a God of the gaps. It is our understanding of how living matter functions that drives the argument for not only a Designer but for also an Implementor who can fashion biomolecules into living matter. This view suggests that the laws of nature have been ordained by the Creator to sustain an orderly Universe. These laws are to be discovered and utilized by us. Belief in a supernatural Creator stimulates students of nature to discover the Creator's thoughts. Contrary to the pronouncements of some¹ that biology is meaningless without evolution, the study of nature draws the student closer to its Author. For the creationist, religion and science are not mutually exclusive domains. Rather, they are different avenues toward the same Source.

SUMMARY OF CHAPTER 5

1. Everyday experience teaches us that manufactured goods with new functions are made from pre-designed components.
2. Successively more complex levels of our reality with new functions are based on the interactions of simpler forms of matter. This suggests that our complex reality is designed.

REFERENCES AND NOTES ON CHAPTER 5

1. Dobzhansky T. 1973. Nothing in biology makes sense except in the light of evolution. *The American Biology Teacher* 35(3):125-129.