

# PHYSICS LIFE INTELLIGENCE

James A. Putnam

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The Universe is understandable to us because it and we are part of the same orderly process. The existence of order has the greatest importance when we are considering the cause and means by which the universe operates. Having order means there are predictable patterns of operation. The idea that something is predictable conveys the meaning that order had to have been established before anything else occurred. It is the origin of the establishment of order and its connection to intelligent life that is being sought for in this analysis.

Current theoretical physics reflects the adoption of mechanical laws of motion. Mechanics, life and intelligence must have a common universal nature. The practice of theoretically separating vital universal phenomena is unfortunate. It is understandable to sometimes seek understanding by identifying separateness of properties; but, real understanding requires that we complete the process by establishing unity of properties. There are levels of limited understanding that are passed through along the way. They cannot be demonstrated to exist as true separate spheres of activity. When I speak of them individually, it is only for the purpose of defining their prominent traits for introductory purposes. It is my intention to demonstrate that motion, life and intelligence are not fundamentally unique from one another, but rather that they are inseparably unified by virtue of a single original cause for all.

The first level of understanding is being pursued as theoretical physics. Theoretical mechanical physics has been granted premier importance in defining the operation of the universe. However, it cannot accomplish this task; because, mechanics cannot define or even show a connection to life and intelligence. The adoption of mechanical ideas supplants what should be a continuing thorough scientific search for the real cause of all action. This is unfortunate because mechanics gives only a very rudimentary perspective on what is occurring. It involves only the prediction of changes of velocity by mathematical means. Motion is a phenomenon that is an indispensable part of the universe. Mechanics, life and intelligence all rely upon motion, and, more generally, upon change.

Physics theory, relying upon mechanical causes of force, should not be relied upon in the analysis of the nature of the universe. Its usefulness is inherently limited to solving problems involving changes of velocity. Its theory should be viewed as an expediency allowing physicists to speak of cause and effect without having to explain cause. If we wish to predict 'how far a ball will fly' or 'how long it will fly' we use physics. The questions of 'What makes the ball fly?' and 'Is there a reason why the ball is flying?' are beyond the abilities of physics. These are questions whose answers are a part of understanding the full nature of the universe.

The second level of operation of the universe is life. Life is identified as the second level because its existence is traced down to levels of development for which it is difficult to show its evidence. Levels below our recognition of life are commonly studied from a mechanical

perspective. In other words, at this level molecules are described by mechanical functions. A fundamental force radiating from a source called electric charge is said to cause the most important activity. We are given no understanding of a mechanical process that can cause life. We are left with hollow answers for the evolution of life.

Consider the empty meaning of the explanation that: 'The source of biological novelty is genetic mutation arising when the DNA blueprint for life is subtly altered by imperfect copying or through the impact of an ultraviolet ray with a gene.' How can random alterations of a design plan improve the design? All improvements require many coordinated simultaneous changes, and the ability of their effects to work together toward a complex, meaningful purpose. How do molecules acquire purpose? How do molecular variations advance the development of purpose?

There is a misstep that occurs so easily it can seem to make sense. Physics has identified fundamental mechanical forces for the purpose of explaining why all action in the universe occurs. Its perspective on the atomic and molecular scale is that electrical force is the means of evolution of complex matter. It is generally accepted that life occurs at a higher level of complexity and that intelligence appears at an even higher level.

The misstep occurs because we observe what we identify as electrical force linking matter together. We see matter leading to complexity that leads to life and intelligence. It is an easy but unsupportable conclusion that electrical force is the cause of life and intelligence. If this connection is held to be a scientific fact, then it is necessary to explain electric charge. Physicists do not know what electric charge is. If there is no explanation for the cause, then there is no meaningful connection made to the effect.

Is it possible that electromagnetism is the cause of life and intelligence? We have used it very successfully in developing powerful artificial intelligence. Since we can use its properties to produce mechanical robots and artificial intelligence, then perhaps this is the first step in establishing a mechanical line of development for real life and real intelligence. We know there was a simple beginning, and perhaps this repeats it. It is a fact that our computers are already far more powerful in some areas than is the human brain.

Computers can perform arithmetic operations far faster than can humans. If we did not use our computers for the purpose of performing calculus operations such as integration, we would be far less advanced than we are. It is even possible to imagine that computers represent more than just the initial stage of intelligence. Some suggest they may represent the future stages of intelligence. The improvements in computers are representative of different stages of our intelligence. However, they are machines and are incapable of generating intelligence.

For one thing when it is said that computers add faster than humans, we are misrepresenting what humans are doing. Machines add because it is a mechanical process. Humans do not add. Humans think about what it takes to solve a problem and then attach meaning to the solution. The mathematics in between is mechanical and is not a human function. Humans can only imitate it. We either have memorized the answer to an addition problem or we cannot do it. We either know by memory that 3 plus 2 equals 5 or we must resort to counting. When we encounter addition problems with numbers too complex for us to have memorized the solution, we resort to working with the simple numbers for which we have memorized the answer. This is why we usually solve the ones and the tens and the hundreds and so on separately.

Artificial intelligence is just what its name means. It is not the real thing. It is not even partial intelligence. It is missing all the characteristics of real intelligence. Artificial intelligence has no inkling of awareness, no consciousness, no sub consciousness and no independent meaning. Typical artificial intelligence is a matter of charged particles being pushed and pulled around from location to location. It begins with the motion of particles and ends with the motion of particles. Everything in between involves only the motion of particles.

When a result is achieved, the machine must be forced to do something that is mechanical and without meaning for the computer. For example, if the answer is the number 5, then the machine is forced to mechanically display an arbitrary symbol that is mechanically meaningless. Only real intelligence looking at it from the outside world can believe anything meaningful happened. The machine knows nothing, believes nothing and its future prospects of developing real intelligence are not at all enhanced by the experience.

We have no basis for assigning purely mechanical powers to the particles of matter participating in life. Mechanical powers are inanimate. We know that matter is far more than just sources of mechanical force. Almost all matter is defined as having always been inanimate, according to the mechanical perspective. Now an incredibly small portion is observed to be animate and highly intelligent. This insignificant amount of matter is said to be now aware of the lack of awareness of all other matter. This highly intelligent matter has been formed from the same matter that is defined as being completely unintelligent. Total lack of animation is credited with giving birth to animation. It has to be the case that the perceived fundamental differences between living and nonliving matter are illusory.

There has been no empirical evidence that any fundamental mechanical differences exist. There is no empirical evidence that life is a separate force. We cannot honestly say that any new fundamental properties are a part of life, but are not a part of nonliving matter. While we see a stark contrast between living and non-living matter, we cannot find a distinct mechanical division in our empirical observations. All that can be said scientifically is there are many levels of complexity of life. The lower levels of complexity show hardly any resemblance to the higher levels. The differences in complexity appear so great that it becomes imagined the lower forms are not a part of life. This is an arbitrary nonscientific conclusion. The lower levels of complexity just keep becoming less complex. Is it not possible for the complexities of life and intelligence to approach zero complexity without becoming non-life and non-intelligence?

The differences between the behavior of particles and humans are vast. We need to be able to talk about them separately. We can't speak of everything at once. However, to imagine there is a complete break somewhere along the chain of development is unwarranted. If there was a complete separation at any point then the universe could not have assembled parts of itself into intelligent life. Unless we add a new kind of magical power after the origin of the universe, then: That which is currently defined as inanimate matter became animate matter through natural, continuous processes which existed from the origin of the universe.

The third level of operation of the universe is intelligence. Intelligence is given the third level status because it is generally viewed as coming into existence after life. It is often presumed that first there was unintelligent life and then there came intelligent life. I do not accept this distinction. However, it serves as a useful starting point for discussion. How does something that is non-life produce life? How can non-intelligence produce intelligence? In order to believe in purely mechanical matter, one must first believe mechanical forces are capable of producing intelligence.

If we want to understand the nature of intelligence then we can begin by analyzing its role in life. Only life possesses the intellectual resources that allow for complex understanding and intuition. What provides understanding? Where does intuition come from? Where does recognized life come from? Not from computers. They did not exist until we made them. They are mechanical servants to life and intelligence. They are mechanical tools knowing nothing more than a hammer does.

A hammer can be used to build a house. The house is evidence of intelligence. So is the hammer. However, the hammer has not acquired any measure of intelligence as a result of its participation. The hammer is evidence of intelligence, but it is not representative of real intelligence. Computers also do not represent intelligence. They are in no way involved in the evolution of intelligence. They help us to learn, but they do not participate in causing intelligence. Computers will never be assembled from or gain any level of understanding from the natural processes of the universe. Real life was! Real intelligence was! We were!

We find our roots in the geological record. Something amazing happened here on earth. Parts of the earth rose up and became us! What we see in the geological record is the first single cell life forms existed on Earth for a very long time. There must be an important reason why this stage lasted so long. There is a reason for everything. This very significant lapse of time is an important part of an orderly process. Afterwards the complexity of life began to increase exponentially. Humans were rushed onto the scene. The ultimate accomplishment, the development of the human brain, appears to have been completed.

When we examine the evolution of life we find a high degree of similarity of DNA among all life forms. This points to the conclusion that all life had the same source. This presents a great challenge to mechanical evolution. Even a common origin of the DNA molecule does not provide for common results in all DNA molecules if happenstance is really involved. What we find is the DNA molecule retained a set code right from the beginning. The whole of the variety of life uses this standard form of DNA coding.

Mechanical evolution relies upon the *belief* that chance changes in mechanical parts can add to or change the level of meaning for life and intelligence. Chance mechanical events cannot be demonstrated to change or add anything other than mechanical properties. They cannot change or add meaning of any kind unless the meaning was already provided for by whatever is the source of life and intelligence. No chance occurrence during the long chain of development made any difference at all in what code would be used. This is what would be expected from a well-ordered universe.

For new arrangements of particles to add or change meaning, then meaning has to already belong to those arrangements. The meaning is set before the arrangements take place. We already insist the physically interpreted properties travel with the particle. It is understood it is their combination of effects that causes the total resultant effect of the combination of particles. The physical properties, as they are proposed by physics theory, are not superior to or more real than are the properties of life and intelligence. Their proposed reality is highly vulnerable to challenge, while the reality of life and intelligence cannot be doubted.

The combined meaning for life and intelligence arrives in parts with the particles and becomes a property of the combination of particles. Its meaning is more complex than that of the separate particles when isolated. There is new meaning that is seen by us only in the new combination. This effect is analogous to the way in which molecules demonstrate physical properties not seen or predicted by the properties of the isolated particles. The point is: The combination of

particles does not merely exhibit mechanical properties as a part of the order of the universe. It exhibits some part of all properties of the universe including life and intelligence.

With our well-ordered universe operating for the purpose of producing intelligent life, we should expect clear coordination in the evidence record. Everything must have clear meaning. Nothing is truly dead or meaningless anywhere in the universe. There is a surprising challenge to this expectation. The amount of DNA a life form contains does not correlate with its level of development. For example, there are algae, primitive chordates, fishes, amphibians and others that have more DNA than does a human. A salamander has 32 times as much DNA.

What is the salamander doing with all that DNA? If the DNA molecule evolved along with the complexity of life, then why doesn't the amount of DNA correlate exactly or even closely with the complexity of the life it generates? Since DNA inherently carries the power to produce intelligent life, then why is there so much unused DNA? Its existence is assigned no purpose. How does something so strongly linked with the important function of producing recognized life become ignored? It is DNA and it should represent a purpose. Why do many of the possible arrangements of the DNA code for complex life appear to be without meaning? Why are some of the arrangements of the code of life unused? It is even called 'junk' DNA.

I submit there is no such thing as 'junk' or meaningless DNA. There can be damaged DNA. However, damaged DNA is not ignored. The host life form will make use of it if possible. This is not true for the badly named junk DNA. It is ignored on purpose. Each life form knows which portions of DNA to use and which to ignore. All information must be understood before being recognized for a purpose, even if the purpose is to be ignored. Some junk DNA will probably become recognized as having uses. However, there is a great deal of it. Most may have no function. It is the DNA with no apparent function that I refer to as junk DNA. It would be better to refer to it as seemingly unused DNA; however, it is popularly referred to as junk DNA. I will adhere to convention.

The junk, i.e. unused, DNA is recognized here as not representing a valid part of the specific intended design. It is purposely ignored because its meaning is excluded from the specifically intended design plan. Since the life form makes what is obviously an intelligent decision to not use the junk DNA, then a plan is being followed even in the act of ignoring DNA. Why then is there junk DNA at all? The answer to this question is a key to learning the process by which life evolved on the Earth.

It has not been good scientific practice to defend undirected mechanical evolution while overwhelming challenges remain unexplained. Just as with physics, the old interpretations attached to the fundamental building blocks of evolutionary theory must constantly be revisited and revised until old and new knowledge show natural, continuous unity. All conclusions must remain tentative until we finally know enough to satisfactorily explain the empirical facts of the evolutionary process. The knowledge of the past must be viewed repeatedly while freed of its theoretical bias. Both past and present knowledge, cleaned and unpackaged, must be looked at as a whole for the possibility of previously unrecognized, more complex patterns functioning in the operation of the universe. Just as it should be true for physics, the answers we derive must make real scientific and human sense.

For example, the human brain is the vessel of human intelligence. The meaning it understands is already contained in the patterns of universal understanding which are an inherent, always present property of the combinations of matter from which it is formed. It is not scientific to insist upon the appearance of new, unanticipated properties, even mental ones, added on to the

nature of the universe after its origin. This does not mean the design of the human brain is analogous to the fixed, programmed instinct of lower life forms.

The human brain has the capacity to change patterns of neuron connections into new patterns. However, all possible patterns of connections carry established meaning with them in a manner analogous to the different arrangements of DNA molecules. In this way the human brain is free to explore many more possible patterns than the rigidly held patterns of instinct. It can pursue the meaning to be found in a vast number of new arrangements. It can experiment with these rearrangements of patterns in an effort to rise to new levels of understanding. It can discover the existence of new, more complicated thought.

All patterns are representative of parts of the operation of the universe. The individual brain must already have access to these genetically generated patterns and their meanings. Individually, probably none of us contain all the possible genetically generated patterns of understanding. We can hope that collectively we have most or perhaps even all of them. It depends upon how much understanding may have been lost during the long periods of evolution. During this time the mutations that occur by accident could have destroyed some of our capacity to understand. Hopefully our numbers have been great enough to prevent the damage of random chance mutations from erasing any of our collective genetically inherited intelligence.