

## What is Life?

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One starting point in discussing the many aspects to the philosophy of chiropractic, is to examine one of its central questions, “What is life?” Most chiropractors agree that living systems are self-healing, self-organizing, and self-regulating. These attributes of living systems begin to describe what life is. The question that (to the chagrin of some), lies at the heart of the chiropractic paradigm, is not just that life is defined as *vis medicatrix naturae* (the healing power of nature), but that it has distinct attributes from non-life.

Concurrently, this question has become a prime focus of many philosophically minded biologists. (Table 1) By looking below the surface, we find that the philosophy of chiropractic and modern theories in biology have many parallels. In fact, they have developed alongside one another.

If this is true, that current biological thinking and the philosophy of chiropractic are very similar, then there may be new and innovative ways to educate, research, and actually do chiropractic. Before exploring some of these possibilities, it is important to examine the question in more detail. What is life?

### **Vitalism**

The term “vitalism,” has a long history. While this has been discussed in much of the recent chiropractic literature, there are some basic assumptions that have been missed. Koren has said that vitalism is, “really about biological laws.”<sup>1</sup> Koch has described this view as moderate vitalism (which is close to *vis medicatrix naturae*).<sup>2</sup> This is different than extreme vitalism which posits a supernatural élan vital that animates organisms.

Peters, invited the delegates at the WFC Conference on Philosophy to keep the term.<sup>3</sup> At the same conference, Astin suggested that the theories associated with vitalism are one of chiropractic’s most distinguishing features.<sup>4</sup> Coulter has acknowledged that vitalism is one of the roots of the chiropractic paradigm, but stressed the pragmatic roles of our metaphors as of prime importance.<sup>5</sup>

While all of these points are valid, and represent excellent reasons for keeping the term, they neglect to qualify certain basic assumptions. The first one is that most scientists define

vitalism as “extreme vitalism”. These scientists rarely define vitalism as self-healing.

And besides the scientists, it is difficult to have a discussion about a term that has so many interpretations. To some it means that the living system is vital. To others it means the body heals itself. To others it means that a spiritual entity inhabits the body. To still others it means that god is the central organizer of life. Some would even suggest that all of the theories presented in this article are vitalistic.

The question becomes, how can chiropractic maintain its distinct philosophical insights as to life, health, and even spirituality, without falling into linguistic problems? One tentative answer is to explore the central question of, “What is life?”

### **A brief history**

D.D. Palmer has one chapter in his *Chiropractor’s Adjustor* entitled, “What is Life”.<sup>6</sup> B.J. Palmer also looked at this question in some detail. He even wrote a book entitled, “Palmer’s Law of Life”.<sup>7</sup> In both of these works, even though they were written almost fifty years apart, the living system is viewed as unique to the non-living system. The Palmers’ used the term innate intelligence to distinguish the living system from non-living matter, which they termed universal intelligence. These ideas have a long intellectual history.

Most notable for this discussion, is Stephenson’s answer to the question. Stephenson’s book, “*The Chiropractic Textbook*,” (1927) has been a classic in the field since its first publication.<sup>8</sup> It was well supported by B.J. Palmer. In it, Stephenson used Webster’s dictionary to define life. Please keep in mind, this is not some work of philosophy, it is Webster’s dictionary from the 1920s! (Table 2) Even though chiropractic has developed its own philosophy about the unique organization of living processes, it relies on the dictionary to actually define life. Traditional courses on the philosophy of chiropractic still teach this definition as “the five signs of life; excretion, reproduction, assimilation, adaptation, and growth.”

Obviously, the definition is not Stephenson’s primary focus. He used the definition to support his main premises that life is

self-organizing. He states that we can study the processes of the organization to prove the intelligence. (Table 3) This proof, is problematic because it rests on the *a priori* assumption that the intelligence already exists.

Leaving the question about the term “intelligence” aside, the focus on the unique organizational qualities of living systems stands alone.<sup>9</sup> It is here that the philosophy of chiropractic can have a useful discourse with modern biology. So, the chiropractic insight as to the unique organization of living systems is not dependent on the traditional chiropractic definition of life, i.e., the signs of life. What are some other definitions of life?

### **Biology in the Early 20th Century**

Biology as an academic discipline is not much older than chiropractic. Only since Darwin suggested that living creatures evolved from the biosphere in 1859, has the field been approaching the status of physics and chemistry.<sup>10</sup> At the turn of the century, when D.D. Palmer was performing his first adjustments, the hot topics of discussion were, “How could life have evolved from matter?” and, “What is the difference between living and dead matter?” There was a new urgency to this age-old debate.

In 1922, Morgan wrote a book called, “Emergent Evolution.”<sup>11</sup> Here he introduced the concept of emergence into biology; that new forms could emerge from previously unpredictable elements. In 1926, Smuts wrote, “Holism and Evolution.”<sup>12</sup> In it he proposed the new term, “holism”, to describe the inseparability of life, mind, and spirit. There was a new feeling amongst biologists. The need to understand how life was different than physics and chemistry was paramount.

Between the 1920s and the 1940s, biologists were searching for the organizing principles that explained the uniqueness of biology.<sup>13</sup> Much of Stephenson’s language describing innate intelligence is very similar to the way in which these biologists described living processes. For example, he wrote, “Then what is Innate Intelligence? Scientifically, it is the Law of Organization. (This is by no means a view of the physicists but is squarely in Chiropractic.)” (1927, p. 180)

### **Schroedinger’s Little Book**

In 1944, Schroedinger, already famous for his quantum equations describing the particle/wave function, wrote a book called, “What is Life?”<sup>14</sup> Since then, it has been fondly referred to as “Schroedinger’s little book.” In it, he hypothesized that living systems must have two main properties. The first was an aperiodic crystal with which it could pass down hereditary information. This idea inspired Watson and Crick to find the double helix of DNA. In 1962, they won the Nobel prize for their discovery.

The second idea of Schroedinger’s was that life had to be “neg-entropic”. That is, it went against the second law of thermodynamics. So, instead of breaking down, living systems used entropic energy to build up. This was not to say that living systems were separate from a greater entropic universe, just that they had the unique ability to stave off entropy, unlike rocks and other coarse matter. This idea inspired Illya Prigogine to experiment with the concept of dissipative structures.<sup>15</sup> This is where a living system uses the energy passing through it to

self-organize. Prigogine won the Nobel prize in 1977 for his discovery which led to the development of lasers.

This concept of dissipative structures has been used in describing the philosophy of health by several authors. Dossey explained this process as essential to understanding the dynamics of disease and healing.<sup>16</sup> Black has related the idea directly to the concept of innate intelligence.<sup>17</sup> Epstein has explained it in reference to the cause of vertebral subluxation.<sup>18</sup>

While most of biological research followed the discovery of Watson and Crick, there is an extensive amount of research and theory following Prigogine’s line of thought. These researchers continued to explore the organizing relationships within the living system that distinguished it from non-living processes. The question, “What is life?” continued to beg for answers.

### **From Systems, to Chaos, to Complexity**

In 1952, the father of General Systems Theory, von Bertalanffy, noted Prigogine’s research from 1946 as one of the two fundamental principles of living systems.<sup>19</sup> The other he noted was the hierarchical development of intricate subsystems. It is the interaction of these many levels that influence the organizational relationships. Like B.J. Palmer in the 1950s, Bertalanffy was searching for the laws that governed the unique behavior of biological processes.

It is this parallel line of thinking that is so important. While chiropractic was struggling for survival and then acceptance, biologists were able to research and expand their hypotheses. In the last twenty -five years, many books and articles have documented what is now being called, “The New Biology.”<sup>20</sup>

Two distinct theories were developed due to the use of high-powered computers. The first was chaos theory in the 1970s. It is a way to examine the seemingly chaotic behavior of very complicated interactions. Scientists have revealed that chaos is actually a very complex and ordered geometry underlying many natural systems. Some examples are the branching patterns of trees and lungs, coastlines, and especially weather patterns.

The mathematics that is used to predict weather patterns has now been applied to understanding physiology. Cardiac rhythms, menstrual cycles, and brain wave patterns are all being studied with mathematics.<sup>21</sup>

Complexity theory grew out of chaos theory. It examines how complex organization emerges from seemingly unpredictable circumstances. Life itself is seen as an inevitable result of very complex interactions.

A recent book by Goodwin and Sole’ coincidentally entitled, “Signs of Life”, applies the science of complexity to the intricate order of living systems.<sup>22</sup> They suggest that physiology exists at the edge between order and chaos, and health can be understood as a dynamic and robust state that is natural to living systems.

So, what is life? Still this question looms. Scientists are exploring in greater numbers, the inherent self-organizing function of living systems. Chiropractors across the world are teaching people many answers to this question. How can the chiropractic profession and the field of biology benefit from each other? How can chiropractic utilize the insights of these biological theories?

## Education, Research, and Practice

There is ample data on physiology, morphogenesis, and embryonic development, to incorporate some of the new biological theories into the chiropractic curriculum. This would have the benefit of lending scientific credence to the organizational aspect of the theory of innate intelligence. It would give students some hard facts to base the chiropractic theories on. Also, it would link traditional science courses with philosophy courses.

Research priorities could explore chiropractic's role in the robust health of the living organism. There are many ways that health could be studied. By relinquishing a reductionist and allopathic research model, chiropractic could remain true to its philosophical leanings toward holism and non-therapeutic practice.<sup>23</sup> This would have the added benefit of providing chiropractic research studies as data for the new biology.

By truly examining the many principles that underlie dynamic robust living systems, chiropractic techniques could examine their basic assumptions. A critical appraisal of all methods and outcomes assessments could be measured against biological theories. Techniques could compare notes and learn from each other in this regard.

## In Conclusion

Does this model of life take away the vitalistic aspects of the philosophy of chiropractic? No more than Webster's definition does. Those aspects of the philosophy that deal with consciousness and mind, are best left for a separate discussion.<sup>24</sup>

Since chiropractic has a long history of using standard biological concepts to actually define life, it stands to reason that new models for life should be incorporated into the profession. This is especially true now because the new biology is more consistent with the chiropractic theory of innate intelligence than the traditional signs of life. The latest models for the signs of life are powerful and can be tested with mathematical descriptors. This is a very exciting time for the philosophy of chiropractic.

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TABLE 3: What is Life? Quotes from prominent biologists: 1910 D.D. Palmer:

"Organized beings are constantly undergoing a change of material, yet remain practically the same." (pp. 106).

1944 Erwin Schroedinger

"Life seems to be orderly and lawful behavior of matter, not based exclusively on its tendency to go over from order to disorder, but based partly on existing order that is kept up." (pp. 68).

1977 Illya Prigogine and Isabelle Stengers

"In this context life, far from being outside the natural order, appears as the supreme expression of the self-organizing processes that occur." (pp. 175).

1995 Lynn Margulis and Dorian Sagan

"The question, 'What is Life?' is a linguistic trap. To answer according to the rules of grammar, we must supply a noun, a thing. But life on Earth is more like a verb. It repairs, maintains, recreates, and outdoes itself." (pp. 22).<sup>25</sup>

1996 Fritjof Capra

"There is something to life, something nonmaterial and irreducible – a pattern of organization." (pp. 81).

2001 Brian Goodwin and Ricard Solè

"The very concept of health, so elusive that it has no place in the lexicon of contemporary physiological concepts, is revealed as a subtle emergent property of the dynamic complexity of living organisms." (pp.22).

TABLE 2: Stephenson's definition of life via Webster

Art. 64. THE SIGNS OF LIFE.

**The signs of life are evidence of the intelligence of life.**

**The signs of life are the evidences of the "powers" of intelligence.**

**There are five principal signs of life.**

Definition of *life*: "The quality or character which distinguishes an animal or a plant from inorganic or from dead organic bodies and which is especially manifested by metabolism, growth, reproduction and internal powers of adaptation to environment; the property by which the organs of an animal or plant, or the organism as a whole, are conceived as maintained in the performance of their functions, or the state in which all or any of the organs of a plant or animal are capable of performing all or any of their functions." (Webster)

TABLE 3: Stephenson's Principles 18-23

**No. 18. Evidence of Life.**

The Signs of Life are evidence of the intelligence of life.

**No. 19. Organic Matter.**

The material of the body of a "living thing" is organized matter.

**No. 20. Innate Intelligence.**

A "living thing" has an inborn intelligence within its body, called Innate Intelligence.

**No. 21. The Mission of Innate Intelligence.**

The mission of Innate Intelligence is to maintain the material of the body of a "living thing" in active organization.

**No. 22. The Amount of Innate Intelligence.**

There is 100% of Innate Intelligence in every "living thing," the requisite amount, proportional to its organization.

**No. 23. The Function of Innate Intelligence.**

The function of Innate Intelligence is to adapt universal forces and matter for use in the body, so that all parts of the body will have co-ordinated action for mutual benefit.