

Causation Related to Self-organization and Health Related Quality of Life Expression based on the Vertebral Subluxation Model, the Philosophy of Chiropractic, and the New Biology

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Abstract — The philosophy of chiropractic, which dates to the first half of this century, is about the self-organizing/self-healing ability of the body and the importance of the nerve (nervous) system in coordinating this process. The vertebral subluxation model reflects this understanding. Recent theories in biology, which have their roots in the organismic biologists of the thirties, also support this concept. Chiropractic's biological explanation of the healthy living organism is shown to be supported by modern theoretical biology. The philosophy of chiropractic has traditionally posited a spiritual quality to this definition of *life*, which relates more to quality of life expression than a strict scientific explanation. In order to re-integrate this essential characteristic with the biological explanation, it is necessary to use concepts from systems theory and philosophy. Thus, the primary thesis of this paper is that somato/biology is expressed primarily through self-organization, while the psycho/spiritual is expressed through self-healing. Using techniques of modern integral philosophy, this thesis is used to link chiropractic philosophy to modern (new) biological concepts, and current paradigms associated with understanding health. The Health Continuum Model is proposed as the process through which this is accomplished.

Key Words: Autopoiesis, chiropractic hypothesis, health related quality of life, health continuum model, vertebral subluxation.

Introduction

Thesis

The principle thesis of this paper is that somato/biology is expressed primarily through self-organization, whereas the psycho/spiritual is expressed through "self-healing." The significance of this thesis is evaluated through the tenets associated with quality of life, chiropractic philosophy, and what is termed the "new biology."¹ Leplège and Hunt,² state "It is indeed reasonable to assume that someone in the best possible physical and emotional state compatible with their medical condition has the best chance

of achieving a high quality of life." Thus, the recognition of relating physical and emotional state with quality of life is of interest as it has been previously recognized and introduced as part of the definition of health proposed by the World Health Organization in the late 1950's.³ Moreover, by merging these concepts with self-organization and self-healing, the concept of "self-creation, as the cause of health" is advanced. The following treatise outlines the logic supporting the formation of this concept.

The Chiropractic Hypothesis of the Vertebrate Organism

The chiropractic profession has its roots in definitions proposed by D.D.⁴ and B.J. Palmer⁵ during the first half of this century. The Palmers defined the living organism as self-organizing and self-healing. They hypothesized that organisms convert external forces into internal forces and use them to self-organize and that the nerve (synonymous with nervous) system plays a central role in the process.^{4,6} The purpose of this paper is to show that the Palmer's insights are congruent with modern theories,

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and thus have the potential to be the clinical testing ground for such theories.

Kleynhans⁷ explains that chiropractic can mostly be understood as a philosophy of biology. Kleynhans delineates, "homeostasis, limitations of matter, effects of adjustments, and subluxation as the cause of disease" as philosophy of biology. He relegates "neurological entity, mental impulse supply, and holism" to metaphysics. Alternatively, current biological theories support these latter components as being part of the philosophy of biology. Thus, recent advances in theoretical biology reveal that the Palmers were actually philosophers consistent with biological principles.

One common theme between the chiropractic conception of life and modern theoretical biology is "organization." A perusal of thirty-nine volumes of the "green-books," (texts written by B.J. Palmer and his staff spanning a period of 50 years), for the term "organization" as it applies to the pattern of a living organism, revealed seventy-six quotes deemed relevant by the present author. The concept behind the green books was to create a theoretical basis for understanding the inherent organizing properties of living systems, and to create science textbooks reflecting those theories.

Stephenson's *Chiropractic Textbook*,⁸ was endorsed by B.J. Palmer as a clear presentation of his biological and chiropractic theories. Stephenson's text has been a major source of reference for the chiropractic profession for the last seventy years. In the text, thirty-three principles are presented that are the cornerstone of chiropractic philosophy. It is from these thirty-three principles that four were chosen for this paper which sum up the seventy-six quotes relevant to organization. Each relevant principle is preceded by its number:

“21 — The mission of innate intelligence is to maintain the material of the body of a 'living thing' in active organization;

23 — 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 coordinated action for mutual benefit;

26 — Universal forces are destructive, and innate forces constructive, as regards structural matter;

28 — The forces of innate intelligence operate through or over the nerve (a.k.a. nervous) system in animal bodies.”

Stephenson⁸ explained that a living system is a process of intelligence, and clearly focuses on the pattern of organization as central to the living organism.

Based on the four principles selected, and Stephenson's definition of innate intelligence as "the law of organization"⁸ the chiropractic conception of the biology of vertebrates can be proposed as a chiropractic hypothesis of the vertebrate organism. In this regard, it is proposed that the living system (vertebrate organism) is inherently/innately self-organizing and self-healing. The primary coordinating mechanism of this organization is

the nerve system. The organizing information, defined as mental impulse, travels from brain to spinal cord to the periphery and the viscera. The system utilizes internal and external recurrent forces, as energy dissipating through the system, to maintain its innate self-organization.

This author suggests that the Palmers based their insight on empirical observation of the healing process. However, by understanding greater organization as greater health, a dilemma arises. Is greater health judged as the purpose of life? The Palmers suggest that the goal of living organisms is to express their respective optimal organizational pattern,⁵ and in humans, this expression extended to spiritual and intuitive insights.^{4,9} The Palmers also proposed that the cause of this process was the law of organization,⁸ or the law of life.¹⁰

Before exploring the basis of this philosophy of chiropractic within modern thinking, it is necessary to describe the objective underpinning the practice of chiropractic. The description chosen for this paper is well accepted by many chiropractic practitioners. It can be stated as the location, analysis and correction of vertebral subluxation,¹¹ because this condition is considered in and of itself to be a detriment to the full expression of health.

The Vertebral Subluxation Model as the basis for further philosophical understanding

The Vertebral Subluxation Model¹² acknowledges historical and more recent scientific advances relevant to the concept of vertebral subluxation.^{13,14} Traditionally, vertebral subluxation has been defined as consisting of misalignment of a vertebrae, partial occlusion of an inter-vertebral opening and pressure on the nerve or spinal cord contained therein. This results in an interference to the "mental impulse," which has been hypothesized as the general organizing information transmitted by the nerve system.¹² When the vertebral subluxation occurs, it is proposed that the organism is unable to fully express its organization, hence a state of dis-ease ensues,¹⁵ which may contribute to the development of a host of pathological conditions.¹⁶ The etiology of the vertebral subluxation is attributed to an imbalance of internal and external forces.⁴

The VSM of Boone and Dobson describes the vertebral subluxation and suggests ways to study its correction:¹⁷

“The study of subluxation-based chiropractic and the vertebral subluxation seems best served by combining research methods from the basic sciences, biomedical sciences, and sociology/anthropology. This approach will encourage a spectrum of information derived from case reports and more sophisticated research paradigms reflecting designs, data collection, and interpretation by skilled multidisciplinary researchers.”

In concert with this proposed research strategy, this paper describes the two main levels of health within chiropractic philosophy as being somato/biological and psycho/spiritual. Thus, the full expression of physical organization within human beings must include both somato/biological and psycho/spiritual health, as both are encompassed in the function of expression which includes a self-organizing aspect and a self-healing aspect.

To advance this idea, it is necessary to review modern theoretical biology to see how it relates to the chiropractic hypothesis, and if the new biology sheds any light on the two main levels of health.

Moreover, as Boone and Dobson¹⁷ suggest, “research methods from the basic sciences and biomedical sciences” are not enough to measure the full spectrum of human health. Sociology/anthropology research methodologies are also necessary.

The Health Continuum Model

It is clear from the VSM’s proposed research strategies that, in studying the outcomes associated with vertebral subluxation correction, overall health as a concept needs to be more specifically defined. This includes studying the social science concept of health related quality of life.² In this way, a more thorough knowledge of the health related outcomes of the correction of vertebral subluxation can be assessed.

Understanding health as multifaceted is far from a new concept.³ Since the time of the introduction of the definition of health by the World Health Organization in 1958, health related quality of life (HRQL) assessment has become one important way to acquire a more complete spectrum of information.¹⁸ It is suggested, therefore, that health can be viewed as a process (continuum) which moves towards ever increasing quality of life, which is the result of a fuller expression of inherent physical organization. Thus, the health of the somato/biological aspect of the organism becomes the basis for psycho/spiritual health. The view that psycho/spiritual health is an expression of the inherent organization of the organism is supported by chiropractic theories,^{4,5,8} current biological theories,^{19,20} medical philosophers,^{21,22} and humanistic,²³ and transpersonal psychology.²⁴

Thus, the process of unimpeded self-organization promoting a full somato/biological and psycho/spiritual expression can be viewed through a “Health Continuum Model,” (HCM). It can also be deduced that a logical outcome of this model, for the organism, would be self-healing. Therefore, the HCM can also be thought of as a model of self healing (SHM). Consequently, these two concepts are used interchangeably throughout this treatise.

The Palmers also discussed the chiropractic adjustment in relation to somato/biological health and psycho/spiritual health.^{4,25} However, as far reaching as their theories may have been, they were limited by contemporary philosophical and biological models which did not contain the modern lexicon associated with these disciplines. For this reason, The health continuum model (HCM) is proposed as a bridge between their insights and modern theoretical biology, transpersonal psychology and the current understanding of health which includes biological, emotional, psychological, spiritual and social well-being.

Constructing the Bridge

The Category Error

As a first step in constructing the HCM bridge, it must be recognized that the Palmers did not clearly differentiate their terms. As Bryner²⁶ points out, the Palmers often used the same term; innate intelligence, to represent both the organization of

the living system (somato/biological), and the soul/spark of life (psycho/spiritual). That is, the soul and the cause of organization were often equated. When two different levels are equated, a category mistake is committed.²⁷ Biological organization, and spirit/soul are different metaphorical levels relative to explaining the organism. In an attempt to integrate these two levels as a process of self-organization and self-healing (HCM), the Palmers failed to discuss their differences. However, by understanding the category mistake, which has been overlooked by critics of the Palmers, the logic error and the confusion regarding the Palmer’s use of metaphor are explained.

Furthermore, if the terms can be understood scientifically, differentiated, and understood philosophically, they can then be integrated more effectively.²⁸ It is proposed that the HCM is one model through which this can be accomplished. By explaining the process of healing through the HCM, the two levels of somato/biological and psycho/spiritual can then be integrated.

Scientific Validity of the HCM

The health continuum is well represented in the literature. It begins with form, function and organized pattern expression,¹⁹ and then emerges step by step toward life satisfaction and human development,²¹ self-actualization,^{22,23} and self-transcendence.^{24,29}

This full range of health expression, from somato/biological organization to psycho/spiritual actualization can be identified within the Palmers’ chiropractic hypothesis. The HCM reflects the Palmer’s law of organization, and thus it is a viable way to understand the significance of the correction of vertebral subluxation within the context of the philosophy of chiropractic. With the HCM as the framework, one can focus separately on those aspects within the chiropractic hypothesis that deal with somato/biological health in contrast to those that deal with psycho/spiritual health. This approach provides flexibility between different philosophical viewpoints concerned with healing. As well, a philosophical groundwork for the VSM and its research proposals that remains consistent with the philosophy of chiropractic is retained.

Differentiating Terms

If innate intelligence is taken as the cause of organization, and expression of that cause is the organization itself, then the chiropractic hypothesis is actually about the process of self-organization within living organisms. The HCM is this process, but the traditional philosophy of chiropractic goes deeper, it looks to ultimate cause.

The Palmers talked about the cause of organization itself as a principle called universal intelligence. This was an interesting philosophical ploy because it linked biological organization to the laws of physics while maintaining the uniqueness of biology. However, the problem with their notions is still the category mistake. That is, they acknowledged a common organizing principle within all organisms that was an aspect of the organization inherent in all matter. However, this organizing principle of matter was not differentiated from the spiritual unity espoused by mystical traditions. This doctrine was so close to the perennial philosophy of Leibniz and Huxley,³⁰ that it was often inter-

changed as such, especially by B.J. Palmer.³¹ The perennial philosophy was never clearly defined by the Palmers. Wilber³² writes, “The central claim of the perennial philosophy is that men and women can grow and develop (or evolve) all the way up the hierarchy to spirit itself, therein to realize a ‘supreme identity’ with god-head — the ens perfectissimum toward which all growth and evolution yearns.” The Palmers’ equated that mystical truth with the biological expression of organization. Although it was a category mistake, it left open a doorway to explain other levels of health that are often associated with psycho/spiritual development.

Philosophical Understanding

Using principles of modern integral philosophy,^{24,28} the dilemma of the category mistake can be bridged. That is, when discussion is limited to the expression of organization, a common language can be found between science and philosophy. Anything else posited other than the empirical observation of the present-moment expression of organization leads to deductive first principles. The HCM is based on personal observations. First principles, such as universal intelligence, are insights which attempt to explain where the organization came from.

By limiting the discussion to biological observation as the starting point of the HCM we can see a commonality in all life expression. By using the HCM as the basis for viewing life, it is acknowledged that living human organisms, when able to express their organizational pattern to their highest potential, exhibit ever higher levels of health and quality of life.

However, by taking the approach of limiting the discussion to biological observation is the first principle essence of the chiropractic philosophy lost? This author would conclude the answer to be no. The Palmers saw universal intelligence as being the cause of organization. Causation in this sense becomes the cause of health and organization. When an organism is less organized, i.e., sick (biological observation), the “ideal” organizational pattern is less than being fully expressed. Thus, within traditional chiropractic philosophy, the “intelligence” is still present, even though the ideal organization is not clearly expressed.

Moreover, it is the law-like causation of health through which the first principle essence is retained in the HCM. That is, the observation by the Palmers that living organization is distinct, has been termed, “the law of life.”¹⁰ This expression is in keeping with other biological concepts such as “the law of organization,” which has been used by Bertalanffy,³³ “the law of self-organization” which has been used by Kauffman,³⁴ and “the law of emergence” used by Holland.³⁵ Add to these as higher rungs of the life ladder, the “law of autopoiesis,” and the “law of self-creation.” Through such terminology, one can better understand B.J. Palmer’s conception of “the law of life.”¹⁰

Therefore, the HCM bridges the gap between the somato/biological and psycho/spiritual levels of life expression while retaining the first principle essence. This is because, as the levels of health are made explicit (i.e., clear and distinct), the underlying law becomes evident. This clarity also creates a validity link since the principles of the “law of life” have been similarly stated in other well accepted “laws.”

Consequently, even though the HCM is limited to biological

observation as the starting point, it is implicit in the HCM, as it relates to chiropractic philosophy, that the “cause” of the biological observation is based on a “law” that is independent of the observation.

Historical Context and Integration of the Chiropractic Philosophy into Modern Theoretical Biology

The concepts written by the Palmers were specific to a time and place in the history of biological thought. Differentiating between biology and physics has been an issue at least since Darwin.³⁶ Stephenson’s quote⁸ distinguishing life’s organization from inert matter is well noted, “Innate intelligence; Scientifically, it is the law of organization. (This is by no means a view of the physicists but is squarely in Chiropractic.)” The search for an answer to the question “What is Life?” has left its mark on the century.^{4,10,37-42} D.D. Palmer’s quest for the answer led to extensive research. He was well read in surgery and medical physiology as well as pathology.^{43,44} B.J. Palmer was strongly influenced by J.P. Morat⁴⁵ and Crile⁴⁶ both of which were early proponents in the explanation of life as an organizational/energetic phenomenon.^{47,48} While keeping in mind the psycho/spiritual aspects of the HCM, it is important to map out the somato/biological component, especially since the modern scientific theories are so very similar to the chiropractic hypothesis. The Palmers explanation of self-organization was contemporary for its time and foreshadowed modern theory. Due to the limited distribution of chiropractic writings and the category error, it is not surprising that the Palmers insights have been consistently left out of the history of biological thought in the twentieth century.

The Law of Organization

Innate intelligence was understood by B.J. Palmer as more than the expression of organization or the expression of life-force, it was the cause of the organization. This look towards organization was new amongst biologists of that era.⁴⁹ Bertalanffy³⁸ called it the organismic revolution. Instead of debating between vitalism and reductionism, they considered themselves organismic biologists,⁵⁰⁻⁵³ holists,⁵⁴ emergentists,⁵⁵ and later systems theorists.³⁸ These biologists were interested in how the whole defined the parts and how the organizing relations between the parts defined the whole. Every whole was seen in context with its environment. This holistic view evolved into the concept of holon or whole/part.⁵⁶

The Law of Self-Organization

Capra⁵⁷ has noted that “organization,” as it was commonly used in the early part of this century’s biology language, has shifted to the term “self-organization.” An example of self-organization is the whirlpool that forms upon water draining. The dynamics of the water moving through the drain causes a spontaneous whirlpool to form. The whirlpool maintains its own structure as long as the energy (water) continues to pass through it. Consumption and excretion in living organisms are analogous to the water spiraling down the drain. The living organism

uses the incoming energy such as food and oxygen to self-organize. It dissipates excess energy. Energy must dissipate through the system in a non-linear, far-from equilibrium fashion.⁵⁸ Kauffman³⁴ says, “free living systems are dissipative structures, complex metabolic whirlpools.” The dynamics of self-organization play an important role in the morphological pattern formation.¹⁹

In today’s biological language, Stephenson would probably use the phrase “law of self-organization.”³⁴ This term is also used here, although it does not fully express the uniqueness of a multifaceted definition of life and health, as there are obvious differences between whirlpool formation and living organization.

The difference between life and inert matter has to do with the “law” of self-organization. In the philosophy of chiropractic, this “law” is the cause of health.¹⁰ The vertebral subluxation is a limit to the system’s ability to express that “law,” and hence the entire HCM is impeded. Vertebral subluxation has been referred to as a cause of dis-ease (and any of its associated pathologies).¹⁵ It is proposed that since outcomes proceed from cause, the cause of health is paramount. This health-oriented approach is utilized in the analysis of vertebral subluxation by many chiropractors.

Autopoiesis and Cognition as the Somato/biological Basis for the Chiropractic Hypothesis

Chilean neurobiologist Humberto Maturana⁵⁹ and cognitive neuroscientist Francisco Varela⁶⁰ developed autopoietic theory as a way to define the living organism. Autopoiesis means “self-creating.” Maturana and Varela⁶¹ took for granted that living organisms were defined by their pattern of organization. They acknowledged the biomechanical/reductionist paradigm and agreed that living organisms were machines. The question they asked, that redefined how to look at life, was “What kind of machines?” Their theory created a new paradigm in our understanding of living organisms. “An autopoietic machine continuously generates and specifies its own organization through its operation as a system of production of its own components, and does this in an endless turnover of components under conditions of continuous perturbations and compensations of perturbations. Therefore, an autopoietic machine is a homeostatic (or rather a relations-static) system which has its own organization (defining network of relations) as the fundamental variable which it maintains constant.”⁵⁹

D.D. Palmer wrote, “Organized beings are constantly undergoing a change of material, yet remain practically the same.”⁴ If we combine D.D. Palmer’s concept of “organized being” with Maturana’s⁵⁹ concept of organization as “the specific relations that define an autopoietic system,” we can begin to apply autopoietic theory to the chiropractic hypothesis. Instead of “law of self-organization,” it may now be more appropriate to use the term “law of autopoiesis.”

To understand the evolution of the law, it is important to clarify and define concepts such as homeostasis, biological autonomy, structural coupling and cognition. Once this brief overview is complete, the role of the nerve system in an autopoietic system can be evaluated.

Maturana⁵⁹ uses the term “relations-static,” because homeostasis is a property of the organizing relations of the system.

This concept originated with the organismic biologists of the thirties. Their focus was on the organizing relationships within the organism. They were interested in how the parts were related to create the whole and how the whole defined the parts. These ideas set the tone of systems theory and eventually, Maturana and Varela’s⁶¹ theories.

Strang⁶² and Bryner,²⁶ both replace the organizational pattern with homeostasis. Actually, homeostasis is a part of the organizational pattern. In autopoietic theory,⁵⁹ as well as the chiropractic hypothesis, the being as a “homeostatic system...has its own organization.” Homeostasis and the chiropractic definition of “innate intelligence” are different. In both theories, the maintenance of the organization through self-creation or autopoiesis is primary. Homeostasis is secondary, and therefore only a property of the self-organizing system.

Biological autonomy is a consequence of autopoiesis. The biological autonomy of the autopoietic machine is defined by the organizational boundaries of its self-production processes. Maturana writes, “Autopoietic machines are autonomous; that is, they subordinate all changes to the maintenance of their own organization.”⁵⁹ Chiropractic’s focus is on the individual’s expression of its full organizational pattern. This complements the notion of biological autonomy. Stephenson⁸ is very clear that innate intelligence balances the external forces, and uses them for self-creation.

An organism is biologically autonomous and thus separate from its environment. This is why Maturana and Varela⁶¹ draw a distinction between organismic biology and autopoietic theory. The autopoietic system is energetically open and organizationally closed. This means that nutrition passes through the organism, but once it is inside the organism, there is no distinction drawn within its autonomy. The organizational boundaries are defined by its self-creation processes. Self-creation occurs as part of the organizational pattern. It has no need to distinguish itself from the energy coming in or excess being excreted. Maturana and Varela⁶⁰ explain that an autopoietic system (organism) has no inputs or outputs, all of the energy entering is utilized for the maintenance of the organization or dissipated. The energy is either integrated or excreted.

In chiropractic theory, the system uses internal forces to express itself. It does not need to distinguish between itself and the environment. The organism utilizes external forces, transforms them into internal forces and uses these to express its organization.⁸ Maturana and Varela⁶⁰ use the example of the submarine pilot (who lived his entire life in the submarine). The pilot was congratulated for his steering maneuvers around a reef. He replied that all he was doing was obeying flashing lights and pulling levers. The organism just responds to the external information based on its internal attempts to remain organized.

Varela⁶⁰ explains that the organization of an autopoietic system remains in the face of deformations (perturbations that threaten the maintenance of the organization), or else it disintegrates. Deformations of the organization and compensations by the system to maintain its organization occur in two ways, environmental and internal. The internal deformations are caused by external forces and can create compensations in the system. Within chiropractic, vertebral subluxations are considered one type of compensation. Thus, the organism could not effectively

adapt to life challenging forces. Stephenson⁸ writes, “Innate Contraction of Forces are the efforts made by Innate Intelligence through the tissues of the vertemere region in response to a concussion. When a subluxation occurs, it is because the reaction to Innate’s resistance (in the body) is ill-timed or unbalanced, through the limitations of matter.”

The way in which an autopoietic system maintains its organization in the face of environmental and internal perturbations is called structural coupling. Based on its internal awareness of how to maintain its organization, the living system uses the recurrent perturbations from the environment for its own maintenance and self-creation. “In these interactions, the structure of the environment only triggers structural changes in the autopoietic unities (it does not specify or direct them), and vice versa for the environment.”²⁰

Structural coupling is synonymous with adaptation. The uniqueness of Maturana and Varela’s²⁰ approach is the importance it places on the ability of the system to use outside forces to create its organization. The term trigger is significant for this discussion. Traditionally, the chiropractic adjustment was considered a trigger that the system uses to correct its own vertebral subluxations.⁸ The living organism knows how to use that force and adjust its deformation/vertebral subluxation, because that is the nature of its self-organizing/self-healing process. This property of knowing is basic to both the chiropractic hypothesis and autopoietic theory.

Cognition and Intelligence

The fact that D.D. Palmer⁴ called the hypothesis innate intelligence, and that sixty five years later, Maturana & Varela⁶¹ entitled their book *Autopoiesis and Cognition*, is no mere coincidence. This is congruent with Bateson’s⁶³ *Mind and Nature*, and Piaget’s⁶⁴ *Biology and Knowledge*. These writings have one thing in common, that sensorimotor experience is mind-like.⁶⁰

Along with Piaget⁶⁴ and Bateson,⁶³ Maturana & Varela,⁶¹ laid the foundation of mind and cognition as an inherent aspect of biological organisms. Maturana & Varela⁶¹ write, “Living systems are cognitive systems, and living as a process is a process of cognition.” The process of information exchange, externally and internally, in this sense is considered mind or cognition (knowing). As we have seen, Stephenson⁸ considered the living system to be a “process of intelligence.” Maturana & Varela²⁰ further explain this concept by saying, “All knowing is doing and all doing is knowing.” This understanding of life as “knowing through doing” is essential to the chiropractic hypothesis.

Wiener^{65,66} described cybernetics as the exchange of information in a feedback loop. This implies that any exchange of information with the environment is “mental activity.” Weiner’s theory of cybernetics influenced systems theories. This influence can be seen in all of these modern theories of mind within living organisms. Bateson⁶³ explains that any exchange of information between living systems and their environment is “Mind.” Piaget⁶⁴ wrote that sensorimotor actions were the lowest level of biological cognition. Maturana & Varela,²⁰ describe living systems as “knowing.” These ideas were foreshadowed by the chiropractic concept of “intelligence.” Stephenson⁸ wrote,

“Selection (of food) requires local and repeated judgements; judgement requires intelligence, and local judgements require a local intelligence, that is, an intelligence in the body.”

Beckman, Coulter & Fernandez,²⁹ acknowledge this systems approach to mind as an aspect of the self-organization of life. Their analysis does not deal with the chiropractic hypothesis *per se*, but it is interesting to note that these concepts were being considered within the chiropractic profession in the early part of the century, and that links to modern theory are starting to be made.

Autopoiesis, the Nerve System and Vertebral Subluxation

Another biological aspect of the chiropractic hypothesis remains; the nerve system’s role in maintaining the autopoietic system. Maturana and Varela⁶¹ note that it is a distinct system. According to these authors, like the organism itself, the nerve system is an organizationally closed system, with no inputs and outputs, but is energetically open. Moreover, they state that nutrition does pass through it, but it uses all energy to maintain its own organization. It does not recognize the difference between its own forces or external forces being coupled to the autopoietic system. Thus, the nerve system is both subordinated to the organization and helps to generate it.

A perturbation within the environment is presumed to create compensations within the organism. Since the nerve system is coupled to the organism, it is proposed that perturbations to the organism can cause perturbations in the nerve system. If the nerve system then fails to generate “significant neuronal relations for its participation in the autopoiesis of the organism, the organism disintegrates.”⁶⁷ D.D. Palmer⁴ explained that interference to the nerve system would disrupt the organization of the being. He defined this interference as being attributable to vertebral subluxation. He considered such interference to the system’s organization to be pathology. If the disruption was not corrected, death would eventually occur.

The law of self-creation as the systems/philosophy framework for the psycho/spiritual qualities of the HCM

The term autopoiesis means self-creation. The term self-creation retains a quality that more accurately portrays the self-healing aspect of the chiropractic hypothesis. As the focus is shifted from the somato/biological organization of the human being, to the psycho/spiritual expression, poetic metaphors such as self-creation are more appropriate.

The “law of autopoiesis” describes the inherent capacity within the organism to be an autopoietic system. In order to express the psycho/spiritual qualities of the HCM, the “law of self-creation” is the preferred term because it implies self-transcendence from the physical to the spiritual and new emergent possibilities.

In the context of the two main levels of health, self-healing must be understood holistically. The concept of holism needs to be clarified. Many authors such as Beckman et al,²⁹ Phillips, Coulter, Adams, et al,⁶⁸ Mootz⁶⁹ and Black,⁷⁰ comparing the phi-

losophy of chiropractic with systems science confuse the concept of holism. There is a difference between the relationship of the organism's parts as a holistic synergy, and the relationship of the organism as a whole to its environment. One can discuss how the environment effects the organism and thus causes vertebral subluxations. Alternatively, one can discuss the holistic nature of the organism and how the vertebral subluxation effects the whole organism, or how the correction of the subluxation effects it as a whole. The authors cited do not clearly draw such distinctions.

This point is important within the chiropractic profession because there are chiropractors that focus on the environmental causes, and chiropractors who focus on the correction of the vertebral subluxation only. Focus on the environmental causes is defined by Winterstein⁷¹ as a need to be the all encompassing, natural physician. Gelardi⁷² defines chiropractors that correct vertebral subluxations only, as objective straight chiropractors.

Because of the duplicity of thought regarding holism, Koestler's⁵⁶ concept of holon and holarchy are used in this treatise. The system's concept of holon and holarchy are central in understanding the structure of the health continuum. Since every organism is a holon, the structure of a holon requires description. Wilber²⁴ suggests that each holon has four basic tendencies; self-adaptation, self-preservation, self-dissolution, and self-transcendence. Self-adaptation, self-preservation and self-dissolution are inherent within the sciences of self-organization as well as the chiropractic hypothesis. They are the way in which the autopoietic system maintains its coherence as a whole. This concept is more congruent with viewing holism from the perspective of how the vertebral subluxation, and its correction, effects the organism as a whole.

The law of emergence as central to the law of self-creation

Self-transcendence from the physical to the spiritual provides the language to discuss the HCM as it acknowledges the transcendent nature of various levels of health. What does it mean to be healthier? On the continuum from form and function to actualization and transcendence each new level of health emerges from the previous state. Thus, emergence is a crucial element to the concept of self-organization. Holland⁵⁵ writes at the beginning of his book, *Emergence*, "In short, we will not understand life and living organisms until we understand emergence." In harmony with this concept, it is proposed that the HCM unfolds as each new level includes and transcends every holon below it.

Holarchy is the structure wherein a new holon transcends and includes the lower holon.⁵⁶ According to the Palmers, as the organism gets healthier, it is more organized. Each new level of health is an emergent higher level of organization. Each level of health transcends the level below it as a new emergent whole. Kauffman³⁴ states, "Although life as an emergent phenomenon may be profound, its fundamental holism and emergence are not at all mysterious." The law of autopoiesis explains how the organism maintains its coherency as a whole, the law of self-creation explains how this whole gets healthier. The law of emergence is the process of self-transcendence from physical to spiritual.

The concepts of emergence and holarchy create a framework

with which to understand the HCM. As described in the introduction, the primary thesis of this paper is that; somato/biological levels express mainly through self-organization, and the psycho/spiritual qualitative levels are mainly expressed through self-healing. Leplège et al² write, "It is indeed reasonable to assume that someone in the best possible physical and emotional state compatible with their medical condition has the best chance of achieving a high quality of life." By merging the concepts self-organization and self-healing, we get the law of self-creation, the cause of health.

By understanding health as the emergent holarchic self-transcendent expression associated with clearer self-organization, the chiropractic adjustment (which is the trigger for the organism to release the vertebral subluxation which interferes with the organizational expression and thus health) becomes the clinical testing ground to understanding living organisms. By studying the outcomes of the chiropractic adjustment, theorists of the new biology can gain insight into the basic laws organizing life.

The law of self creation as basis for emergent health related quality of life.

Emergent health related quality of life (EHRQL) is suggested as a more precise term than HRQL. It reflects all three components of the VSM research strategy, the new biology, the HCM and the chiropractic hypothesis of vertebrate organism. It is suggested that the term emergence should be added to HRQL to reflect this deeper understanding. The study of EHRQL is a model with which to create new data supporting the concepts of self-organization and autopoiesis.

Measuring Health

Hawk, Bernard, Dusio, et al,⁷³ and Hoiris, Owens, & Pflieger,⁷⁴ have proposed different assessment tools and projects to measure the relationship between chiropractic care and HRQL. These studies utilize the SF-36 and the Global Well-Being Scale, as questionnaires which measures immediate subjective experience after a chiropractic adjustment. The main problem with these studies is that they are geared toward allopathic biomedical sciences, immediate therapeutic benefit and focused on the cause of disease rather than the cause of health. These research instruments are not geared toward the study of EHRQL.

Blanks, Schuster, and Dobson⁷⁵ have developed an outcomes assessment instrument that meets the concerns of the health continuum model. This is the first such instrument designed specifically to measure the WHO³ (1958) definition of health for a population of patients already in good health. The Blanks et al,⁷⁵ instrument is more appropriate to study the chiropractic hypothesis as an aspect of the new biology.

With the chiropractic hypothesis as the basis for practice, coupled with an outcomes assessment instrument to measure the EHRQL outcomes, the chiropractic adjustment could become the clinical/biological testing grounds for the complexity sciences and the new biology. In this context, Gelardi's⁷² conception of chiropractic as a subluxation correction service is the most feasible form for statistic analysis. This form of non-allopathic chiropractic is well represented within the profession.

With the non-allopathic correction of vertebral subluxation as the focus, the chiropractor would introduce fewer variables into study designs. Focus on the holon of the organism and how its organization is expressed would be the central theme of such a study. A broader scope approach such as Winterstien's⁷¹ natural physician, would encompass many environmental factors affecting the organism. By focusing on the myriad ways that vertebral subluxations can be prevented through examining the environment creates many factors that would be very difficult for a specific study. By focusing on the outcomes of the chiropractic adjustment on the organism's organizational expression only, a more feasible study could be devised.

A research project could be initiated such as the Blanks et al⁷⁵ study amongst many field practitioners. This type of research would benefit both the chiropractic profession and the scientific community, which could translate to more world-wide acceptance and understanding of the objectives and benefits of chiropractic care. As well, the scientific community could gain biological evidence for recent theories such as autopoiesis, emergence, and self-organization. Much of the research presently being done regarding these concepts is structured within computer-simulated artificial life scenarios. The HCM proposed provides an opportunity to study these concepts within living humans.

Emergent health related quality of life is viewed by the author as the greater expression of life's organizational pattern. It transcends and includes the organism's lower states of organization/health. This is the linking concept that completes the philosophical and scientific basis of the chiropractic hypothesis and the HCM. The chiropractic hypothesis is the philosophical basis for the VSM.

Conclusions

The chiropractic hypothesis of the vertebrate organism is clearly reflected in modern theoretical biology through the concepts of autopoiesis, cognition and self-organization. The self-healing ability of the organism which is central to the hypothesis can be understood in this context. By following the tenets of modern integral philosophy, terms relating to chiropractic philosophy have been differentiated and clarified in both philosophical and biological terms. As well, these concepts have been integrated into modern theoretical biology (new biology), and additional evidence provided to validate the terms associated with chiropractic philosophy. This has been accomplished by comparison with other existing, well accepted laws relating to somato/biological and psycho/spiritual constructs. This approach provides support for a health continuum model as the process through which to link chiropractic philosophy, with its intrinsic first principle essence, to current theories of modern biology. As well, the link is also established for areas of transpersonal psychology, and the current understanding of health from the perspective of biological (life sciences), mental, psychology, and spiritual well being.

Since a true assessment of life's essential qualities must explain more than the organization of the somato/biological aspects of the human organism. The only way to fully examine the effectiveness of the chiropractic adjustment is to assess the process of

"healing" associated with the full expression of the human organizational pattern. It has also been shown that this can be done through the HCM. Evaluation of these outcomes can be accomplished through appropriate psychometric and physiological questionnaire instruments measuring multiple expressions of emergent health related quality of life.¹⁷ In this way, the psycho/spiritual outcomes traditionally associated with chiropractic care can be maintained and monitored scientifically.

The law of self-creation can be understood as the cause of the HCM, as the basis of the chiropractic hypothesis and the core of the vertebral subluxation model. By clearly showing parallels between chiropractic's theories of life and health and modern theoretical biology, a new role for chiropractic can be foreseen. If it can be shown that the outcomes of the chiropractic adjustment do indeed help the organism to transcend to a greater state of health, and express a more optimum organization, the benefits would be reaped by all of humanity.

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