The Use and Abuse of Biodynamics

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Within the Rolfing® community there is growing interest in one of the most astonishing discoveries made by William Garner Sutherland, D.O. late in his life. His discovery was nothing short of a Copernican revolution in therapy. He called it the breath of life. Since his death, Sutherland's theories and ways of working have evolved and expanded in exciting ways. Today, borrowing the word biodynamic from the embryological research of Erich Blechschmidt, M.D., this revolutionary work has come to be called biodynamic craniosacral therapy.

There seems to be widespread agreement that Blechschmidt's profound phenomenological investigations into what he called the biodynamic formative forces responsible for embryological development are somehow foundational for understanding and practicing biodynamic craniosacral therapy. Some ways of stating the relationship between Blechschmidt's biodynamic approach and the biodynamic approach of craniosacral therapy make it appear as though Blechschmidt and Sutherland independently of each other essentially made the same discovery. Other ways of stating the relationship imply that Sutherland's discovery somehow deepens or completes Blechschmidt's theory. But as we shall see, there are actually two rather incommensurate theories of what constitutes biodynamics at work in these discussions.

Thus, Dr. Michael Shea claims, "The biodynamic model of craniosacral therapy is based on the work of the German embryologist, Erich Blechschmidt..." Referring to 23 stages of embryological development, Shea continues, "The tempo and precision of each stage is due to the continuity of wholeness via the biodynamic forces of the Potency of the Breath of Life acting to create order. This order, the intelligence of the Potency of the Breath of Life, is located in the fluids. It preserves the unique wholeness of the embryo into the adult... The blueprint for the whole emerges from a force within the fluids as numerous and simultaneous movements... Consciousness surrounds and creates us by a wave in the fluids... From Dr. Blechschmidt's research it can be stated that the changing appearance (shape and form) of the embryo during its 23 stages of growth is not guided by the genes, but rather by the plasma (fluid) with the help of its biodynamic forces (the Breath of Life and its Potency)... All movement that occurs within the unified metabolic field of the embryo is created by the intelligence of the Breath of Life. This is a biodynamic process... Erich Blechschmidt's biokinetic, metabolic fields are a direct expression of the Potency of the Breath of Life... Contemporary embryologists use a different vocabulary... I like the distinctions that Blechschmidt and Sutherland made, which indicate purposeful movements generated by a force within the fluids that creates and maintains balance within all the tissues of the body."[a]

Shea is not alone is his claim that the work performed by Blechschmidt's metabolic fields is somehow assisted by the potency of the breath of life. After discussing Blechschmidt's work with approval, Franklyn Sills says, "At a physiological level, the potency of the Breath of Life acts through the fluid system of the body. This is what maintains order within all [of what Blechschmidt calls] 'spatially ordered metabolic movements'."[b]

In order to better understand and evaluate the craniosacral interpretation that Blechschmidt's metabolic fields are direct expressions of the potency of the breath of life, that potency maintains the order of metabolic fields and helps in phenogenesis (developmental differentiation), let's look more carefully at Blechschmidt's biodynamic approach. Biodynamics is the branch of biology that deals with the energy or activity of living organisms. For Blechschmidt, whose life's passion was embryology, it means not just the study of the organizing forces that sustain and maintain life, but essentially the study of the form-making activity of life itself. According to Blechschmidt, ontogenesis is phenogenesis and the fundamental question of embryology is how form arises in development. Molecular biology has left this question unanswered because it has mistakenly investigated only the chemical and genetic makeup of organisms, not realizing that these aspects of the organism are only the necessary, but not sufficient conditions for phenogenesis.

Denial of the chemical-genetic explanation often leads others to falsely assume that Blechschmidt is offering a teleological explanation instead. But teleology is not science according to Blechschmidt. In order to head off any misunderstanding about the scientific nature of his unique investigations, he argues that "Ontogeny does not represent 'purposeful' differentiation."[c] Blechschmidt's answer to the fundamental question about how form arises is that biodynamic forces (biophysical forces) are the direct causes of differentiation.

Thus Blechschmidt writes, "In any phase of development, changes in form and structure must result from the complex movements of particles of a molecular and submolecular nature. At all times, such movements, which are the manifestations of physical forces, are the direct causes for those changes in position, form, and structure that lead to differentiations... As we are concerned with living organisms, the most fundamental forces... can be described as biodynamic. Thus the form of the organism differentiates directly under biodynamic forces, not chemical-genetic information."[d] "As soon as we describe these movements," Blechschmidt continues, "the previous study of static anatomy becomes one of kinetic anatomy (the anatomy of forming). Movements of molecular and submolecular materials, otherwise invisible, express themselves as the forming movements."[e]

Especially when it comes to ontogenetic differentiation, anatomical representations of development are like snapshots of a dynamic on-going metamorphosis. They are always necessarily static and piecemeal. But the embryo is a unified whole that is always in motion, developing and forming itself from within itself in an orderly way. Without a grasp of the actual dynamic

formative movement of development and its principles of differentiation, anatomical representations with their accompanying descriptions remain a mere sequencing of isolated representations offering no real understanding of the process of formation. By investigating the biokinetic activities intrinsic to these developmental movements and developing the appropriate kinetic anatomy, Blechschmidt managed to capture what is only hinted at in most static anatomical representations — the developmental movement of a unified dynamic whole and its principles of differentiation. He also laboriously created a series of 64 total three-dimensional reconstructions that dramatically reveal the various stages of the developing embryo.

Central to Blechschmidt's kinetic anatomy is his concept of a metabolic field. Appropriating the concept of a force field from physics, Blechschmidt claims that biological processes take place in metabolic fields. All aspects of the body, organs, cells, zones of loose or dense tissue, glands, the brain, etc., are biodynamic fields of metabolism. In fact, the whole body is a metabolic field. "A biodynamic metabolic field is a field of force based on locally ordered metabolism. Metabolic fields are those morphologically definable regions, at all levels of spatial resolution, which contain spatially ordered metabolic movements."[f] Movements in a metabolic field are fundamental to all developmental processes and these metabolic movements are characterized as microscopic and submicroscopic particles moving in a spatially ordered manner. They are always part of a circulatory process and can be morphologically defined. Ontogenesis thus always occurs as directed metabolic movements in metabolic fields.

Since these metabolic movements have structural features (position, shape or outer form, and inner structure or inner form) metabolism can be morphologically defined. Since metabolism can be morphologically defined, it cannot be properly understood if it is seen as merely a chemical process. The concept of a metabolic field also supports the idea that the body is not a thing made of isolated thing-parts, but is rather a unified whole that is always in process and motion. "The concept of a metabolic field is very important. It shows that no cell should be thought of as a rigid unity but rather as a momentary aspect of spatially ordered (submicroscopic) metabolic movement... The same is valid for cell aggregations (tissues), for tissue aggregations (organs) and also for the whole organism at any stage of development. The differentiations could not be described without considering the metabolic field that has been established with fertilization and which is morphologically definable by its cell limits. The continuous transition from developmental stage to developmental stage is based on aligned metabolic movements in metabolic fields."[g]

The manner in which these metabolic movements encounter and cope with the resistance they meet in their surroundings gives rise to different metabolic fields and hence to different developmental forms. Blechschmidt describes eight different metabolic fields, which, each in its own way, gives rise to the various tissues, organs, glands, etc., of the body. The eight fields are called corrosion, condensation, contusion, distusion, retention, dilation, suction, and detraction fields.

In order to understand how metabolic fields create form, let's look at two somewhat simplified versions of how various structures arise. The first example demonstrates how part of the formation of the mouth is due to a corrosion field. When two sheets of epithelial tissue become so compressed that there is not enough room anymore for vascular tissue to supply nutrients and remove wastes, the epithelial tissue dies and causes a number of small perforations. The mouth arises from these perforations.

The second example shows how glands have part of their origin in suction fields. When outer epithelial tissue grows faster than the underlying inner tissue (stroma) it pulls and lifts away from the stroma, causing fluid to flow into the suction field. As a result, wedge-shaped epithelial cells sprout out to absorb the fluid and thereby grow larger. These epithelial sprouts are anlagen (precursors or temporary formations that are prerequisites for the formation of later developmental processes) of both exocrine and endocrine glands.

We now have two descriptions of biodynamics before us, Blechschmidt's and the craniosacral approach represented by Shea and Sills. But we have to wonder: are they talking about the same concept? As we have seen, Blechschmidt clearly states that the form of the organism differentiates directly under biodynamic forces and that these forces are physical. He never mentions the potency of the breath of life or goes in search of any other kind of force outside his metabolic fields to account for developmental order. He nowhere claims what Shea and Sills attribute to him. He doesn't say that the development of the embryo is "guided by the plasma (fluid) with the help of its biodynamic forces (the Breath of Life and its Potency)" or ever come close to claiming his "biokinetic, metabolic fields are a direct expression of the Potency of the Breath of Life." He would not agree that "The tempo and precision of each stage is due to the continuity of wholeness via the biodynamic forces of the Potency of the Breath of Life acting to create order." Blechschmidt never claims what Sills does, that potency or another force "maintains order within all 'spatially ordered metabolic movements'." As we have already seen, he even explicitly denies the teleological approach Shea attributes to him.

While it is true that the potency of the breath of life is an organizing force, it is not a physical force in Blechschmidt's sense.[h] Also, since it acts with purpose and intelligence, it cannot be called biodynamic in Blechschmidt's sense. Furthermore, when Shea says, "primary respiration [the long tide] is said to be an outside-in biodynamic force"[i] he is not using "biodynamic" in Blechschmidt's sense, because he is referring to a force that comes from outside the body that is not morphologically definable. But as we have seen, Blechschmidt's metabolic fields do not extend beyond or come from outside the body and they are morphologically definable.

In short, Blechschmidt is not offering a teleological explanation, he never implies that there is another force or potency that enters the fluids to help or create the developmental movements and their form-making achievements, and he never implies that the biodynamic forces are anything other than the metabolic movements themselves. Therefore, his meaning of biodynamics is quite different from Shea's and Sills'.

As a biodynamic craniosacral practitioner who has experienced how the purposeful intelligence of the potency of the breath of life can create miraculous and amazing changes in a wide variety of client complaints, I can understand and appreciate the temptation to say that the orderly movements of Blechschmidt's metabolic fields are a direct expression of or maintained by the potency of the breath of life. But this interpretation is completely contrary to Blechschmidt's life's work. Blechschmidt

spent years laboriously and meticulously observing human embryos in various stages of development in order to come to his view. Since he believes that his exhaustive descriptions managed to reveal the physical biodynamic forces involved, it would make no sense for him to go in search of yet another force to explain the physical force he discovered.

By claiming that there is another (non-physical) force that guides or maintains metabolic order, Shea and Sills, perhaps without realizing it, are actually substituting an altogether different explanation for Blechschmidt's. Their substitution subverts and contravenes Blechschmidt's explanation because it suggests that the potency of the breath of life is the real or true cause of phenogenesis. Unfortunately, the substitution of this other explanation is made without providing any good reasons for it: no failures to explain various aspects of ontogenesis were ever given, no contradictory evidence was ever cited, no critical experiments were ever performed, and no observations were made to justify this appeal to another explanatory force.

For Blechschmidt, finding the biophysical forces responsible for phenogenesis is what it means to provide the explanation for phenogenesis. Since Blechschmidt's biodynamic approach is sufficient to explain the phenomena in question, the scientific work has been done and it is superfluous to appeal to other forces. Even though the biodynamic craniosacral therapists may think they are only refining or merging Blechschmidt's concept of "biodynamics" with the breath of life, what they really mean by "biodynamics" is quite different from the way Blechschmidt defined it. Hence Sills and Shea are actually equivocating on the term.

Partly because of this equivocation on biodynamics, when stated in general terms, propositions such as phenogenesis are guided by "the plasma (fluid) with the help of its biodynamic forces (the Breath of Life and its Potency)" sound reasonable. But we have to ask ourselves what explanatory advantage, if any, is gained by appealing to the breath of life and its potency to account for metabolic movement. Recall how corrosion fields account for the formation of the mouth and suction fields contribute to the formation of glands. These descriptions are elegant and provide a simple explanation of the phenomena in question. What more is needed? Does claiming that the potency of the breath of life guides the corrosion and suction fields add anything important or explain any features of the phenomena that Blechschmidt overlooked? The clear and unequivocal answer has to be, no. To suggest as Shea and Sills do that there is another force that is the true cause would be like saying to Newton, "I know that you discovered the force of gravity, but what is the true force that is the cause of the force of gravity?" Unfortunately, Shea and Sills do not provide any arguments or reasons for their position. As a result, we are forced to conclude that their addition of the potency of the breath of life to Blechschmidt's biodynamic approach is completely gratuitous. Since their interpretation of Blechschmidt is gratuitous, Shea's claim that the biodynamic model of craniosacral therapy is based on Blechschmidt's work also turns out to be highly dubious.

We have arrived at the end of our discussion of Blechschmidt with the surprising realization that Sills and Shea, instead of espousing one unified theory of phenogenesis, are actually espousing two incommensurate theories. If we assume, as most biodynamic craniosacral therapists do, that Blechschmidt's theory explains phenogenesis, where does that leave the breath of life? There is no question that the breath of life is a mysterious and awesome phenomenon. But what exactly is its function? Since it is an organizing force, what and how does it organize? Anybody who experiences its activities cannot help but be amazed and humbled by the experience. Profound experiences always propel us into casting about for ways to understand what we have witnessed. Unfortunately, many attempts to understand the reality of the breath of life are articulated in the inappropriate categories of Western metaphysics. As a result they often end up as an odd mixture of Platonism, a mechanistic ontology, a pseudo-scientific misinterpretation of Blechschmidt, a loose form of Judeo-Christian monotheism, with a little popularized Buddhism thrown in for good luck–all of which completely occlude the phenomenon in question.

For example, Dr. James Jealous, who also approves of Blechschmidt's work, falls into a description that carelessly mixes many of these inappropriate categories by appealing to a Master Mechanic who created the breath of life with the purpose of infusing the fluids of the body (Blechschmidt's metabolic fields) with a Platonic-like idea (Original idea or pattern) which carries the original blueprint of our form. But what exactly is the organizing activity of the breath of life? Jealous says, "The geometric configuration of the human body, as well as the metabolic processes, are present before the central nervous system develops. We know both from our clinical experience and from research in embryology that the innate wisdom in the body is not contained in any cellular structure. This Innate Wisdom which gives the body form and maintains its existence is not a function of any system of the body. Our health is only secondarily controlled through the central nervous system and the cell nucleus. Our existence is totally dependent upon this Original matrix expressing its intention. The Original design and function is in the fluids of the embryo. It is the permeation of the breath of life into disoriented tissue that re-establishes the Original matrix. The Original matrix is a form that is carried through the potency of the breath of life around which the molecular and cellular world will organize itself into the Original pattern set forth by the Master Mechanic. The perception of this 'Original idea' permeating the tissue should be a direct sensory experience...It is important to get an objective picture of how the patient's health is interacting with the stress mechanism in order for us to begin treatment in a way that is aligned with priorities of the Mechanism [i.e., the breath of life being expressed in the body]."[i]

Since I have already dealt with the problematic nature of these metaphysical speculations about biodynamic therapy elsewhere, I don't want to discuss them here. I only want to raise the question about what the function of the breath of life is and how it can be known. What interests me about this quote from Jealous is how this odd mixture of speculative metaphysics and theology, which contains so much ideation that is not available to perception, is coupled with an admonition to therapists to rely on their perception for their understanding of the breath of life: "the perception of this 'Original idea' permeating the tissue should be a direct sensory experience."

The importance of right perception, and, what is the same thing, right relationship to the practice of biodynamic craniosacral therapy cannot be overemphasized. It is essential and central to the practice. Clearly the answer to the question: how can the function of the breath of life be known? is

through right perception. But it is doubtful that any therapists have tracked the 23 stages of embryological development with their sensitive hands. How then can we be justified in claiming that the breath of life is directing or creating phenogenesis or any other function, for that matter? The answer is we can't–unless we engage in right perception. But right perception demands, at the very least, that we sort out and discard all the faith-based claims and the speculative metaphysics and theology that infect the practice of biodynamic therapy, and only be willing to claim those functions for the breath of life that can be perceived by a community of trained practitioners.

With these comments about right perception in mind, I want to conclude this exploration with questions for future study. What can we say with confidence are the functions of the breath of life? Given the overwhelming evidence of the experience of many practitioners, can we say with confidence that it is intelligent and acts with purpose, that it sustains and maintains form, that it has a corrective, integrative, ordering, and an igniting function? What is meant by what Jealous calls the geometric configuration of the body and what is its relation to the breath of life? Is the breath of life more akin to what the vitalists called the life force? Over and above its sustaining / maintaining function, does the breath of life also create form? And finally how are all of these phenomena perceived?

a. Michael Shea, *Biodynamic Craniosacral Therapy: A Primer* (North Palm Beach, Florida: Shea Education Group, 2002), pp 57-70.

b. Franklyn Sills, *Craniosacral Biodynamics, Vol. 1*, Third Edition (Berkeley: North Atlantic Books, 2001), p. 231.

c. Erich Blechschmidt, *The Ontogenetic Basis of Human Anatomy: A Biodynamic Approach to Development from Conception to Birth* (Berkeley: North Atlantic Books, 2004), p. 5.

d. Ibid., pp. 17-18.

e. Ibid., p. 22.

f. Ibid., p. 22.

g. Erich Blechschmidt, *Biokinetics and Biodynamics of Human Differentiation: Principles and Applications* (Springfield, IL, 1978), p. 6.

h. I do not mean more by "physical" than Blechschmidt does. In order to head off the wrong conclusion, let me stress that when I deny that the breath of life is not physical in Blechschmidt's sense, I am not implying that it is a non-material, mental, or spiritual force. Recall what Blechschmidt said: "In any phase of development, changes in form and structure must result from the complex movements of particles of a molecular and submolecular nature. At all times, such movements, which are the manifestations of physical forces, are the direct causes for those changes in position, form, and structure that lead to differentiations...As we are concerned with living organisms, the most fundamental forces...can be described as biodynamic." Blechschmidt also recognizes that "purely physical or purely chemical processes simply do not exist in living organisms. Faced with life and all its manifold properties, we will simply be describing certain aspects of the biophysical and biochemical features of the living organism, and nothing more." (*The Ontogenetic Basis of Human Anatomy: A Biodynamic Approach to Development from Conception to Birth*, p. 21). Thus, to be more precise we can say the metabolic movements are biophysical forces, and nothing more. Clearly, the breath of life is not a biophysical force in Blechschmidt's sense.

i. Op. cit., p. 150.

j. James Jealous, "Around the Edges" (Vermont, 1994).

k. Jeffrey Maitland, "Toward a Phenomenology of Biodynamic Therapy," to appear in the 2006 *Yearbook of Structural Integration* (published by International Association of Structural Integrators).