

Studying the Bigger Picture

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BIODYNAMIC AGRICULTURE WAS BORN out of a different scientific tradition from what we are accustomed to thinking of. J. W. von Goethe not only understood that the observer and the phenomena are inseparably linked, but his approach to knowing things was different.

The method used in the inorganic sciences is to form an idea or hypothesis and then set up experiments to prove or disprove it. For physics and chemistry this method works wonders, but in the life sciences this method fails to reveal the more subtle processes that occur. Fourteen-day weather forecasts are often wrong, and Darwinian evolutionary theory fails to explain why evolution has proceeded in magnificent bursts followed by glacial change.

Weather forecasting assumes that processes we see going on at present will continue—but the weather itself doesn't work that way. New weather systems arise and others disappear, even though a certain equilibrium seems to prevail where extremes balance each other out.

Darwinian evolution presumes survival of the fittest, but this fails to explain mass extinctions or the subsequent furious proliferation of new species that filled the void. Obviously more than survival of the fittest was involved.

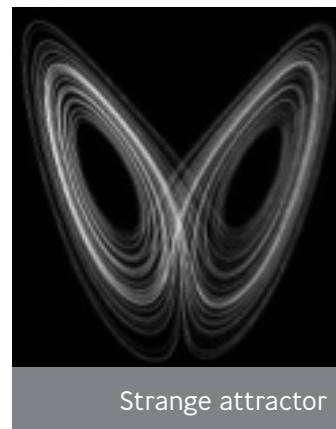
What the study of agriculture requires is another approach, a Goethean approach, which is known as “phenomenology.” It explores how phenomena unfold over time according to patterns that can only be seen when the entire field of observation comes into focus. Once the behavior of the field as a whole is grasped, the emergence and development of future phenomena can be predicted with some accuracy. Any attempt to form a hypothesis before seeing the bigger picture is futile, because the phenomenological approach to science is not based on cause and effect the way physics and chemistry are.

Chaos Theory

Science evolves in interesting ways. Many of the paths for change are blocked because recognized authorities at the top of their fields defend the discoveries and beliefs that made their reputations, and these beliefs become the dogmas that dominate peer review and

stifle innovation. One of the early architects of quantum physics, Wolfgang Pauli, described this inertia to change with the wry comment, “Science advances one funeral at a time.” Nevertheless, change is irrepressible, and if it doesn't take place along old, established paths, then new avenues arise. This occurred in the mid 1950s when Edward Lorenz mathematician working on early computer models of weather prediction, discovered what became known as the “butterfly effect” where even the smallest changes produced very different results. And yet, the results were far from random because they oscillated around something so potent and obscure it became known as a “strange attractor.”

This gave rise to the new science of chaos, born as a result of Lorenz's computer crash.¹ The attraction of seemingly different results to an overall pattern is considered strange because we do not know why the attraction occurs. Yet the phenomenologist acknowledges this attraction exists even though no cause and effect relationship is seen.



Strange attractor

Phenomenology

In a broad sense, phenomenology is a study that helps observers grasp the underlying patterns behind living phenomena. The pattern may only be apparent at the end of a long series of observations which reveal similarities and attractions. Setting up experiments to prove or disprove a hypothesis isn't much help in getting there because those sorts of experiments reveal differences rather than common threads.

Goethe's treatise, *The Metamorphosis of Plants*, is the story of what plants do that is so plant-ish. It is an example of studying plants of all sorts until the fundamental character of plant processes emerges.

In order to edit Goethe's scientific writings, Rudolf Steiner made an in-depth study of Goethe's phenomenology, without which the biodynamic method might never have been born. Where the standard approach goes from hypothesis to experiment and homes in on differences, the essence of phenomenology is to look for coincidence, attraction, synchronicity, and similarity. Two events that show synchronicity could easily be part of a larger whole that is not yet perceived. Synchronous timing of rhythmic events suggests underlying features of a bigger picture. The Goethean approach is to keep looking for coincidence, attraction, synchronicity, and similarity as bigger and bigger pictures emerge.

For example, in his book about climate, Dennis Klocek states:

The lunar orbit is a rhythmic phenomenon. The migration of air masses is also a rhythmic phenomenon. The juxtaposition of the movements of the Moon with abrupt shifts in stable air masses makes it possible to track the movements of the Moon by watching the atmosphere over the northern hemisphere.²

From the viewpoint of Goethean phenomenology it is hard to deny the synchronicity between the months, seasons, weather events, and crop failures or bumper harvests of various different years and the motions relative to the earth of the sun, moon, and planets against the starry background of the universe.

On-Going Observation

For Goethe's phenomenology the process of observation never ceases. Our modern educational system teaches us to answer a question with a single answer and then move on—as though all questions had one and only one answer. We learn to accept substitutes for the real things, as though we could take a picture of a horse and call it a horse. Yet, the more we watch cycle after cycle, the less we can pretend the corpse of a butterfly in a specimen case is the butterfly itself. The living, breathing butterfly is sometimes in the form of an egg, or it is a caterpillar or a pupae depending on its circumstance. No matter how we look at a living butterfly, change is occurring. If not, then what we see is only a dead object, which once housed something called a butterfly that now has vanished. Just looking at a butterfly egg, what is there to suggest the sort

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of caterpillar that will emerge or where it will go and what it will eat? In the caterpillar what do we see to suggest the adult it will become? The transformations are as brief as they are radical. The root does not itself reveal the tree trunk, its foliage, or its fruit. And yet, within each tree there lies a *gestalt* that includes all phases and forms of that type of tree's development and how it may respond to every situation where its seed may fall. This *gestalt* only emerges from a long process of observing the tree in as many situations and circumstances as possible, including in the form of its seed and where it goes. Biophysicist Rupert Sheldrake calls this gestalt the organism's morphogenic field.³ Observation is never truly complete since more and more of bigger and bigger pictures keeps emerging over time.

Our Reality, Our Hope

From the viewpoint of Goethean phenomenology, the dating of geological processes based on what we know of the past few hundred years is like studying a ten-year-old dog for a month and estimating how old it is based on the changes that occurred over that month. This in no way reveals the speed of its growth as a puppy, its youthful behavior, or the senescence of its last year of life. To calculate the life cycle of dogs and envision their pasts and futures based on a month of first-hand observations of a ten-year-old dog is enormously misleading. A bigger picture and a broader understanding has to emerge to achieve an accurate understanding—simple as that.

Solving agricultural riddles involves much the same process as the psychologist who asks his clients a cycle of questions: a) *What is the problem?* b) *How have you participated in this problem?* c) *How have you tried to solve it?* and d) *How does it seem now?* The psychologist gets a clear answer to every question and acknowledges each one. By the time he returns to the first question in the cycle—what is the problem?—he gets a new description of the problem. As he works through the series of questions a changing picture emerges. Each time he starts the question cycle over again the description of the problem has changed—as though peeling a large, colorful onion. Gradually an overview of the problem emerges for the

client. Usually this repetition of a series of questions resolves the problem because, for the first time, the true nature of the problem emerges from the mix of considerations.

The agricultural consultant might ask the same questions over and over so that each time they are new. The grower probably already has the information needed, but what resolves the problem is seeing the bigger picture. This overview often involves the aims and choices of the farmer, not only a single crop, soil, season or circumstance. Any portion of the puzzle can be examined with the same cyclic approach to observation, always looking for the coincidences, attractions, and similarities that lead to comprehending the bigger picture. This is a very different approach to knowledge than the analytical method.

The quest for uncovering the processes of nature is far from hopeless, and biodynamic agriculture, which was born out of Goethean phenomenology, has made a promising start at seeing far bigger pictures that lie behind the everyday circumstances of agriculture. This quest to understand nature can be carried a lot further in the application of the biodynamic method as long as we have an understanding of Goethe's phenomenology and as long as we learn to use it.

NOTES

¹ This story is well told in James Gleick's book, *Chaos: Making a New Science*.

² *Climate: Soul of the Earth* by Dennis Klocek, page 63.

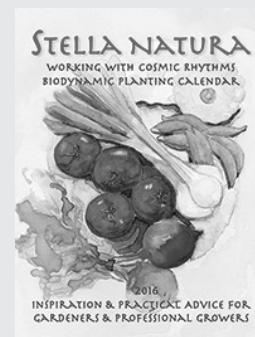
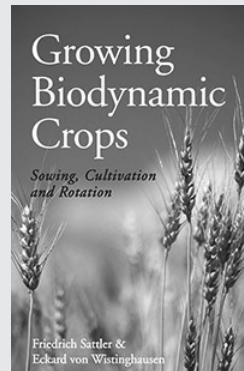
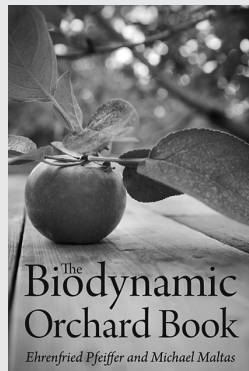
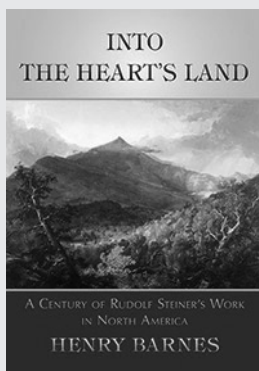
³ *Morphic Resonance: The Nature of Formative Causation*, by Rupert Sheldrake.

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