In the hypothesis of formative causation, discussed in detail in my books *A NEW SCIENCE OF LIFE* and *THE PRESENCE OF THE PAST*, I propose that memory is inherent in nature. Most of the so-called laws of nature are more like habits.

My interest in evolutionary habits arose when I was engaged in research in developmental biology, and was
reinforced by reading Charles Darwin, for whom the habits of organisms were of central importance. As Francis Huxley has pointed out, Darwin’s most famous book could more appropriately have been entitled The Origin of Habits.

**Morphic fields in biology**

Over the course of fifteen years of research on plant development, I came to the conclusion that for understanding the development of plants, their morphogenesis, genes and gene products are not enough. Morphogenesis also depends on organizing fields. The same arguments apply to the development of animals. Since the 1920s many developmental biologists have proposed that biological organization depends on fields, variously called biological fields, or developmental fields, or positional fields, or morphogenetic fields.

All cells come from other cells, and all cells inherit fields of organization. Genes are part of this organization. They play an essential role. But they do not explain the organization itself. Why not?

Thanks to molecular biology, we know what genes do. They enable organisms to make particular proteins. Other genes are involved in the control of protein synthesis. Identifiable genes are switched on and particular proteins made at the beginning of new developmental processes. Some of these developmental switch genes, like the Hox genes in fruit flies, worms, fish and mammals, are very similar. In evolutionary terms, they are highly conserved. But switching on genes such as these cannot in itself determine form, otherwise fruit flies would not look different from us.

Many organisms live as free cells, including many yeasts, bacteria and amoebas. Some form complex mineral skeletons, as in diatoms and radiolarians, spectacularly pictured in the nineteenth century by Ernst Haeckel. Just making the right proteins at the right times cannot explain the complex skeletons of such structures without many other forces coming into play, including the organizing activity of cell membranes and microtubules.
Most developmental biologists accept the need for a holistic or integrative conception of living organization. Otherwise biology will go on floundering, even drowning, in oceans of data, as yet more genomes are sequenced, genes are cloned and proteins are characterized.

I suggest that morphogenetic fields work by imposing patterns on otherwise random or indeterminate patterns of activity. For example they cause microtubules to crystallize in one part of the cell rather than another, even though the subunits from which they are made are present throughout the cell.

Morphogenetic fields are not fixed forever, but evolve. The fields of Afghan hounds and poodles have become different from those of their common ancestors, wolves. How are these fields inherited? I propose that that they are transmitted from past members of the species through a kind of non-local resonance, called morphic resonance.
The fields organizing the activity of the nervous system are likewise inherited through morphic resonance, conveying a collective, instinctive memory. Each individual both draws upon and contributes to the collective memory of the species. This means that new patterns of behaviour can spread more rapidly than would otherwise be possible. For example, if rats of a particular breed learn a new trick in Harvard, then rats of that breed should be able to learn the same trick faster all over the world, say in Edinburgh and Melbourne. There is already evidence from laboratory experiments (discussed in A NEW SCIENCE OF LIFE) that this actually happens.

The resonance of a brain with its own past states also helps to explain the memories of individual animals and humans. There is no need for all memories to be “stored” inside the brain.

Social groups are likewise organized by fields, as in schools of fish and flocks of birds. Human societies have memories that are transmitted through the culture of the group, and are most explicitly communicated through the ritual re-enactment of a founding story or myth, as in the Jewish Passover celebration, the Christian Holy Communion and the American thanksgiving dinner, through which the past become present through a kind of resonance with those who have performed the same rituals before.

The memory of nature
From the point of view of the hypothesis of morphic resonance, there is no need to suppose that all the laws of nature sprang into being fully formed at the moment of the Big Bang, like a kind of cosmic Napoleonic code, or that they exist in a metaphysical realm beyond time and space.

Before the general acceptance of the Big Bang theory in the 1960s, eternal laws seemed to make sense. The universe itself was thought to be eternal and evolution was confined to the biological realm. But we now live in a radically evolutionary universe.

If we want to stick to the idea of natural laws, we could say that as nature itself evolves, the laws of nature also evolve, just as human laws evolve over time. But then how would natural laws be remembered or enforced? The law metaphor is embarrassingly anthropomorphic. Habits are less human-centred. Many kinds of organisms have habits, but only humans have laws. The habits of nature depend on non-local similarity reinforcement. Through morphic resonance, the patterns of activity in self-organizing systems are influenced by similar patterns in the past, giving each species and each kind of self-organizing system a collective memory.

I believe that the natural selection of habits will play an essential part in any integrated theory of evolution, including not just biological evolution, but also physical, chemical, cosmic, social, mental and cultural evolution (as discussed in THE PRESENCE OF THE PAST).

Habits are subject to natural selection; and the more often they are repeated, the more probable they become, other things being equal. Animals inherit the successful habits of their species as instincts. We inherit bodily, emotional, mental and cultural habits, including the habits of our languages.

Fields of the mind
Morphic fields underlie our mental activity and our perceptions, and lead to a new theory of vision, as discussed in THE SENSE OF BEING STARED AT. The existence of these fields is experimentally testable through the sense of being stared at itself. There is already much evidence that this sense really exists Papers on Staring

You can take part in a staring experiment yourself through this web site. Staring Experiments
The morphic fields of social groups connect together members of the group even when they are many miles apart, and provide channels of communication through which organisms can stay in touch at a distance. They help provide an explanation for telepathy. There is now good evidence that many species of animals are telepathic, and telepathy seems to be a normal means of animal communication, as discussed in my book *Dogs That Know When Their Owners Are Coming Home*. Telepathy is normal not paranormal, natural not supernatural, and is also common between people, especially people who know each other well.

In the modern world, the commonest kind of human telepathy occurs in connection with telephone calls. More than 80% of the population say they have thought of someone for no apparent reason, who then called; or that they have known who was calling before picking up the phone in a way that seems telepathic. Controlled experiments on telephone telepathy have given repeatable positive results that are highly significant statistically, as summarized in *The Sense of Being Stared At* and described in detailed technical papers which you can read on this web site. Papers on Telepathy Telepathy also occurs in connection with emails, and anyone who is interested can now test how telepathic they are in the online telepathy test.

Experiments Online

The morphic fields of mental activity are not confined to the insides of our heads. They extend far beyond our brain though intention and attention. We are already familiar with the idea of fields extending beyond the material objects in which they are rooted: for example magnetic fields extend beyond the surfaces of magnets; the earth's gravitational field extends far beyond the surface of the earth, keeping the moon in its orbit; and the fields of a cell phone stretch out far beyond the phone itself. Likewise the fields of our minds extend far beyond our brains.

February 2005
Rupert Sheldrake’s theories

Part 1: Morphic Fields and the Memory of Nature

Rupert Sheldrake, Ph.D, born 28th June 1942, is a British biologist and author. Drawing on the work of French philosopher Henri Bergson to develop the theory of morphic resonance[1], which makes use of the older notion of morphogenetic fields, he has researched and written on topics such as animal and plant development and behaviour, telepathy, perception and metaphysics.

Most biologists take it for granted that living organisms are nothing but complex machines, governed only by the known laws of physics and chemistry. I myself used to share this point of
view. But over a period of several years I came to see that such an assumption is difficult to justify. For when so little is actually understood, there is an open possibility that at least some of the phenomena of life depend on laws or factors as yet unrecognized by the physical sciences.


![Diagram of computer analogy for mind-brain interaction](image)

- His basic argument is that natural systems, or *morphic units*, at all levels of complexity -- atoms, molecules, crystals, cells, tissues, organs, organisms, and societies of organisms -- are animated, organized, and coordinated by *morphic fields*, which contain an inherent memory. Natural systems inherit this collective memory from all previous things of their kind by a process called *morphic resonance*, with the result that patterns of development and behavior become increasingly habitual through repetition. Sheldrake suggests that there is a continuous spectrum of morphic fields, including morphogenetic fields, behavioral fields, mental fields, and social and cultural fields.

- Morphogenesis -- literally, the "coming into being" (*genesis*) of "form" (*morphé*) -- is something of a mystery. How do complex living organisms arise from much simpler structures such as seeds or eggs? How does an acorn manage to grow into an oak tree, or a fertilized human egg into an adult human being? A striking characteristic of living organisms is the capacity to regenerate, ranging from the healing of wounds to the replacement of lost limbs or tails. Organisms are clearly more than just complex machines: no machine has ever been known to grow spontaneously from a
machine egg or to regenerate after damage! Unlike machines, organisms are more than the sum of their parts; there is something within them that is holistic and purposive, directing their development toward certain goals.

- The role of genes is vastly overrated by mechanistic biologists. The genetic code in the DNA molecules determines the sequence of amino acids in proteins; it does not specify the way the proteins are arranged in cells, cells in tissues, tissues in organs, and organs in organisms.
- The fact that all the cells of an organism have the same genetic code yet somehow behave differently and form tissues and organs of different structures clearly indicates that some formative influence other than DNA must be shaping the developing organs and limbs. Developmental biologists acknowledge this, but their mechanistic explanations peter out into vague statements about "complex spatio-temporal patterns of physico-chemical interaction not yet fully understood."

According to Sheldrake, the development and maintenance of the bodies of organisms are guided by morphogenetic fields. The concept of morphogenetic fields has been widely adopted in developmental biology, but the nature of these fields has remained obscure, and they are often conceived of in conventional physical and chemical terms. According to Sheldrake, they are a new kind of field so far unknown to physics. They are localized within and around the systems they organize, and contain a kind of collective memory on which each member of the species draws and to which it in turn contributes. The fields themselves therefore evolve. Each morphic unit has its own characteristic morphogenetic field, nested in that of a higher-level morphic unit which helps to coordinate the arrangement of its parts.

Before considering other types of morphic fields, it is worth examining exactly what a morphic field is supposed to be. Sheldrake describes them as "fields of information," saying that they are neither a type of matter nor of energy and are detectable only by their effects on material systems. However, if morphic fields were completely nonmaterial, that would imply that they were pure nothingness, and it is hard to see how fields of nothingness could possibly have any effect on the material world!

In a discussion with David Bohm, Sheldrake does in fact concede that morphic fields may have a subtle energy, but not in any "normal" (physical) sense of the term, since morphic fields can propagate across space and time and do not fade out noticeably over distance (A New Science of
In this sense morphic fields would be a subtler form of energy-substance, too ethereal to be detectable by scientific instruments. Sheldrake also suggests that morphic fields may be very closely connected with quantum matter fields (The Presence of the Past, p. 120). According to science, the universal quantum field forms the substratum of the physical world and is pulsating with energy and vitality; it amounts to the resurrection of the concept of ether, a medium of subtle matter pervading all of space.

According to Sheldrake, habitual and instinctive behavior is organized by behavioral fields, while mental activity, conscious and unconscious, takes place within and through mental fields. Instincts are the behavioral habits of the species and depend on the inheritance of behavioral fields, and with them a collective memory, from previous members of the species by morphic resonance. The building up of an animal's own habits also depends on morphic resonance. It is possible for habits acquired by some animals to facilitate the acquisition of the same habits by other similar animals, even in the absence of any known means of connection or communication. This explains how after rats have learned a new trick in one place, other rats elsewhere seem to be able to learn it more easily.

- Memory poses a thorny problem for materialists. Attempts to locate memory-traces within the brain have so far proved unsuccessful. Experiments have shown that memory is both everywhere and nowhere in particular. Sheldrake suggests that the reason for the recurrent failure to find memory-traces in brains is very simple: they do not exist there. It is true that damage to specific areas of the brain can impair memory in certain ways, but this does not prove that the relevant memories were stored in the damaged tissues.
- Sheldrake suggests that memories are associated with morphic fields and that remembering depends on morphic resonance with these fields. He says that individual memory is due to the fact that organisms resonate most strongly with their own past, but that organisms are also influenced by morphic resonance from others of their kind through a sort of pooled memory, similar to the concept of the collective unconscious put forward by Jung and other depth psychologists.
- According to Sheldrake, morphic resonance involves the transfer of information but not of energy. But it is difficult to see how the one can take place without the other, though the type of energy involved may well be supraphysical. In theosophical terms, the physical world is interpenetrated by a series of increasingly ethereal worlds or planes, composed of energy-substances beyond our range of perception, sometimes called the akasa. Its lower levels are referred to as the astral light. An impression of every thought, deed, and event is imprinted on the akasa, which therefore forms a sort of memory of nature. Likewise, within and around the physical body there is a series of subtler “bodies” composed of these more ethereal states of matter.
Memories, then, are impressed on the etheric substance of supraphysical planes, and we gain access to these records by vibrational synchrony, these vibrations being transmitted through the astral light. Sheldrake, however, rejects the idea of morphic resonance being transmitted through a "morphogenetic aether," saying that "a more satisfactory approach may be to think of the past as pressed up, as it were, against the present, and as potentially present everywhere" (The Presence of the Past, p. 112). But it is hard to see why such a hazy notion is more satisfactory than that of nonphysical energies being transmitted through an etheric medium.
Social organization is also impossible to understand in reductionist and mechanistic terms. Societies of termites, ants, wasps, and bees can contain thousands or even millions of individual insects. They can build large elaborate nests, exhibit a complex division of labor, and reproduce themselves. Such societies have often been compared to organisms at a higher level of organization, or superorganisms.

Sheldrake suggests that such colonies are organized by social fields, embracing all the individuals within them. This would also help to explain the behavior of shoals of fish, flocks of birds, and herds or packs of animals, whose coordination has so far also defied explanation. Social morphic fields can be thought of as coordinating all patterns of social behavior, including human societies. This would throw light on such things as crowd behavior, panics, fashions, crazes, and cults. Social fields are closely allied with cultural fields, which govern the inheritance and transmission of cultural traditions.

According to Sheldrake, then, human beings consist of a physical body, whose shape and structure are organized by a hierarchy of morphogenetic fields, one for every atom, molecule, cell, and organ up to the body as a whole. Our habitual activities are organized by behavioral fields, one for each pattern of behavior, and our mental activity by mental fields, one for each thought or idea. Sheldrake also suggests that our conscious self may be regarded either as the subjective aspect of the morphic fields that organize the brain, or as a higher level of our being which interacts with the lower fields and serves as the creative ground through which new fields arise (Presence of the Past, p. 213).

According to Sheldrake we are also influenced by social and cultural fields contained within the overall field of the earth. In theosophy we are said to contribute thoughts and ideas to the pooled
memory of the astral light and attract from it those ideas and thoughts with which we resonate most strongly. The astral light may be considered to be the astral body of the earth, and plays a role similar to what Sheldrake calls the morphic field of Gaia.

- Sheldrake admits that his terminology of morphic fields could be replaced by occult terms such as akasa and subtle bodies (The Presence of the Past, p. 307). Whatever the limitations of his ideas, however, Sheldrake has dealt a significant blow to materialistic science with his forceful arguments exposing the inadequacy of physical factors alone to account for the phenomena of life, mind, and evolution, and in support of the idea that memory is intrinsic in nature.
PROOF OF THE POWERS OF THE MIND

The proof of extra-sensory perception and the science of paranormal events.

The most important argument in the world of science today is the clash between the people that believe in a Non-Local Universe versus those that believe in a Local Universe. Local people believe in the direct push pull, cause and effect action, and they do not believe in the power of the mind to effect things at a distance without a direct connection. Non-Local believers see a universe where there is prayer, spirit, a collective consciousness and a connection of all things. They know that there is a power of the mind to effect things and a level of connection of all things.

The Steps of the Proof are:

STEP 1. The test of time. Humans have always felt the connection of mind and spirit. Every race of people and every tribe has had those who have greater abilities to use these powers of the mind. They know that there is a subtle but undeniable force of connection. The Bible, Koran, Bagavad Gita, the analects, and all of the religious beliefs are filled with every page referencing the power of spirit, prayer, faith, hope and God. This belief is Ageless, Universal, and Omnipotent. The test of time is met and if we had a vote on the conflict of Non-Local versus Local there would be landslide 99.9% for a Non-Local universe. The small 0.09% of the people who believe in a Local universe, however, have manipulated themselves into supreme power. The so Geeks laugh at the rest of us for believing in God. They control our lives with their Geek ways. We must take back our planet.

STEP 2. Quantum Theory. Physicists were shocked when they found that a very small quantum experiment could be influenced by the observer. This was called the observer effect and thus the world of science was changed forever when the Observer Effect was PROVED!!!. But the Geek mind had to rationalize and twist away from this truth.

But the proof existed nonetheless and science was changed, although the Geeks have been able to use treacherous and false-hearted ridicule to control the damage. They laugh at those who accept the observer effect. The Geeks also control the funding for science and they stop funding for the open minded scientist who see the Non-Local universe. But now the tables are turned as that we laugh at the closed minded and retentive Geek who’s small petty mind is unable to see the truth.

STEP 3. Medicine’s Paranoia as need for Double Blind. Medicine was shocked when they discovered the placebo effect. The mind of the researcher was able to effect the results of an experiment. The mind of a doctor can effect the patient. The mind of a patient can affect the outcome of a double blind experiment. Proof of the powers of the mind, but still the Geeks twist on.

STEP 4. Fractal Complexity. What we do not know is so vast that it should be humbling. But it takes a lot to humble a Geek. Fractal mathematics has shown that reductionism is now no longer a valid par to of examining complex situations. Non-linear chaos mathematics are needed. When we use this type of analysis we can see that small change might produce a large change. This is known as the ‘Butterfly Effect’ and it allows for the powers of the mind.

STEP 5. Bell’s Theorem. This basic theorem of Quantum Electro Dynamics has shown that twin photons can have instantaneous effects on each other even when light years apart. This has been PROVED theoretically and experimentally to the utmost level of science. But the Geek mind has extreme powers of rationalization and self deception. The Geek mind still insist that the Local universe is a false belief. To do this would take courage and solitude. This is not for the Geek mind to have.

STEP 6. PEIR = Princeton’s Engineering Anomalies Research. After over a decade of research on the effects of the mind in a prestigious American university, the evidence is astounding. It is for it’s quality and quantity and is without doubt PROOF.

STEP 7. The disbelievers always get test results that deny the proof. The hypothesis of our theory is that the mind can effect things. This means that those who disbelieve or scoff at the theory will only be able to get test results that confirm our own disbelief. Why is it that when a researcher does a study that it usually confirms his original belief because there is an effect of the mind. The Geek mind is simply unable to admit that the Geek mind was wrong or is there a much more sinister reason for the Geek disbelief.

STEP 8. The resistance to accepting the powers of the mind is great, in fact it is too great. The resistance is so incredibly great that it becomes PROOF. There appears that this resistance comes from such closed minded people and often psychologically unstable people. These critics will often shake and shush and get over compassion in their attempt to dispel the powers of the mind. Their actions and reactions are so counterfeit and insincere that they cause wonder that perhaps there is an ulterior motive. Is there perhaps a plan to keep the powers of the mind away from the general public.

The Geeks will distract, discredit, disperse, and delay any attempt to communicate the powers of the mind. Their excessive zeal and obvious hidden agenda is slowly breaking down this resistance.
The Observer effect

Observer effect (physics)

From Wikipedia, the free encyclopedia

In physics, the term observer effect refers to changes that the act of observation will make on the phenomenon being observed. This is often the result of instruments that, by necessity, alter the state of what they measure in some manner. A commonplace example is checking the pressure in an automobile tire; this is difficult to do without letting out some of the air, thus changing the pressure. This effect can be observed in many domains of physics. The mind of the observer can affect things.

Computing

To measure software, it is often needed to alter it in some way, even if only in the memory of the computer, changing the behavior of the software itself. Defects that are hard to detect for this reason got nicknamed heisenbug.

Particle physics

For an electron to become detectable, a photon must first interact with it, and this interaction will change the path of that electron. It is also possible for other, less direct means of measurement to affect the electron. (see subspace book experiments)

Electronics

In electronics, ammeters and voltmeters need to be connected to the circuit, and so by their very presence affect the current or the voltage they are measuring by way of presenting an additional real or complex load to the circuit, thus changing the transfer function and behaviour of the circuit itself. Happens in biofeedback devices

Thermodynamics

In thermodynamics, a standard mercury-in-glass thermometer must absorb some thermal energy to record a temperature, and therefore changes the temperature of the body which it is measuring.
A commonly debated use of the term refers to quantum mechanics, where, if the outcome of an event has not been observed, it exists in a state of 'superposition', which is akin to being in all possible states at once. In the famous thought experiment known as Schrödinger's cat the cat is supposedly neither alive nor dead until observed. However, most quantum physicists, in resolving Schrödinger's seeming paradox, now understand that the acts of 'observation' and 'measurement' must also be defined in quantum terms before the question makes sense. From this point of view, there is no 'observer effect', only one vastly entangled quantum system. A significant minority still find the equations point to an observer; Wheeler, who probably worked more deeply on this subject than any physicist thus far, devised a graphic in which the universe was represented by a "U" with an eye on one end, turned around and viewing itself, to describe his understanding.

The Heisenberg uncertainty principle is also frequently confused with the "observer effect". The uncertainty principle actually describes how precisely we may measure the position and momentum of a particle at the same time — if we increase the precision in measuring one quantity, we are forced to lose precision in measuring the other.
Thus, the uncertainty principle deals with measurement, and not observation. The idea that the Uncertainty Principle is caused by disturbance (and hence by observation) is not considered to be valid by some, although it was extant in the early years of quantum mechanics, and is often repeated in popular treatments.

There is a related issue in quantum mechanics relating to whether systems have pre-existing — prior to measurement, that is — properties corresponding to all measurements that could possibly be made on them. The assumption that they do is often referred to as "realism" in the literature, although it has been argued that the word "realism" is being used in a more restricted sense than philosophical realism. A recent experiment in the realm of quantum physics has been quoted as meaning that we have to "say goodbye" to realism, although the author of the paper states only that "we would [. . .] have to give up certain intuitive features of realism". These experiments demonstrate a puzzling relationship between the act of measurement and the system being measured, although it is clear from experiment that an "observer" consisting of a single electron is sufficient—the observer need not be a conscious observer. Also, note that Bell's Theorem suggests strongly that the idea that the state of a system exists independently of its observer may be false.

Note that the special role given to observation (the claim that it affects the system being observed, regardless of the specific method used for observation) is a defining feature of the Copenhagen interpretation of quantum mechanics. Other interpretations resolve the apparent paradoxes from experimental results in other ways. For instance, the Many-Worlds Interpretation posits the existence of multiple universes in which an observed system displays all possible states to all possible observers. In this model, observation of a system does not change the behavior of the system—it simply answers the question of which universe(s) the observer(s) is(are) located in: In some universes the observer would observe one result from one state of the system, and in others the observer would observe a different result from a different state of the system.

The impact of observation on quantum systems has been demonstrated experimentally.

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Recent studies have proven plants have feelings, too

In response to, "Vegetarians have reasons for why they don't eat meat" (Dec. 8), perhaps Mr. Zufall should update his research before claiming that vegetables and plants are incapable of feeling pain and not subject to his scruples regarding eating sentient beings. Researchers from Michigan State University have discovered that plants have a rudimentary nerve structure, which allows them to feel pain. According to the peer-reviewed journal Plant Physiology, plants are capable of identifying danger, signaling that danger to other plants and marshaling defenses against perceived threats. According to botanist Bill Williams of the Helvetica Institute, "plants not only seem to be aware and to feel pain, they can even communicate."

This research has prompted the Swiss government to pass the first-ever Plant Bill of Rights. It concludes that plants have moral and legal protections, and Swiss citizens have to treat them appropriately. The Penn State Vegetarians Club would do well to investigate this data before claiming to be superior to those of us who do not subscribe to the idea that eating meat is morally wrong.
Primary Perception research

(These are excerpts from a talk that researcher Cleve Backster gave at a Silva convention in 1995. For more information, you can read the book, The Secret Life of Your Cells by Robert B. Stone, about Backster's research and its relationship to Jose Silva's mind training systems. This talk is copyright 1995 by Cleve Backster and used with his permission.)

by Cleve Backster

This is the original plant that was attached back on February 2, 1966, in my lab back in New York City.

For whatever reason, it occurred to me that it would be interesting to see how long it took the water to get from the root area of this plant, all the way up this long trunk and out and down to the leaves.

After doing a saturation watering of the plant, I thought, "Well gee whiz, I've got a lot of polygraph equipment around; let me hook the galvanic skin response section of the polygraph onto the leaf."

Now this is a whetstone bridge circuit that is designed to measure resistance changes, and I felt that as the contaminated water came up the trunk and down into the leaf that the leaf becoming more saturated and a better conductor it would give me the rising time of the water....I would be able to get that on the polygraph chart tracing.

Well this was the thing that started it.

Now the thing trended downward rather than upward, which amazed me a little bit because it should have been going slowly upward on the tracings, if it was going to show a drop in resistance.

I moved it up here - this was my move - and then it came down again, and this is the thing that amazed me right here because this contour right away...I'm looking and thinking, "That's got the contour of a human being tested, reacting when you are asking a question that could get them in trouble."

So I forgot about the rising water time and said, Wow, this thing wants to show me people-like reactions. "What can I do that will be a threat to the well being of the plant," similar to the fact that a relevant question regarding a crime could be a threat to a person taking a polygraph test if they're lying.

About 15 minutes along - 13 minutes and 55 seconds along in this initial observation...I had tried different things to try to get a reaction from this plant - I had even dipped a neighboring leaf into a cup of rather warm coffee - and the plant didn't show me anything like a reaction. It showed me, if anything, boredom, and just continued to go downwards. If this thing were an individual, the fact that they were getting bored and sleepy.
But over here, the idea occurred to me, the idea occurred to me - and only the idea - "I know what I am going to do: I am going to burn that plant leaf, that very leaf that's attached to the polygraph."

Now I didn't have matches in the room. I wasn't touching the plant in any way. I was maybe five feet away from the desk. I was essentially away from the plant.

The only new thing that occurred was my intent to burn that plant leaf.

Right here, split second-wise, was when I thought of burning that plant leaf and the image entered my mind. I wasn't using words at all.

And up that the thing went into a wild agitation.

Now this was very late at night and towards morning. The building was empty and there was just no other reason for this reaction. This had been going along at a fairly stable level all the way up to this point.

So this amazed me.

This, I would say, would be a very high quality observation, and my consciousness hasn't been the same since. And this happened in 1966.

I thought, "Wow! This thing read my mind!" It was that obvious to me right then.

So then I went to get some matches from the next room. The secretary was a smoker, and I got some matches out of her desk and brought them in.

The next will show where I came back in the room, right about here. I lit the match. I was even into burning a neighboring leaf rather than the leaf I had hook up. Somehow that was already a special leaf already.

Even before I had a chance to do this I thought, "Well, this massive degree of reaction that I'm getting here, I wouldn't be able to see any additional reaction if it did occur."

So I thought, "Well, let me reverse the process and remove the threat from the room."

So I took the matches back out of the room here, came back in at this point, and the thing just evened right out again, which really rounded it out and gave me a very, very high quality observation.

Now when my partner in the polygraph school we were running at the time came in, he was able to do the same thing also, as long as he intended to burn the plant leaf. If he pretended to burn the plant leaf, it wouldn't react.

It could tell the difference between pretending you are going to, and you are actually doing it, which is quite interesting in itself from a plant psychology standpoint - not industrial plants that I am talking about.

**Review of the book "Primary Perception" by Hal Fox**

If you are a medical doctor, a physician or surgeon, or a professional who deals with human beings and their problems, this book is a must-read. For the rest of the intelligent population, this book is a should-read. Personally, this reviewer highly recommends that you buy and read this interesting report by Cleve Backster about Cleve Backster's life's work.
This reviewer's first information about Cleve Backster came from reading about his early work in Peter Tompkins and Christopher Bird's The Secret Life of Plants. It was amazing to me then, and still is, that a person skilled in the use of a polygraph (equipment used for lie-detection) would think to hook up the polygraph to a plant to measure the plant's response. Backster was about to water a Dracaena plant in the office and wondered whether he could measure the movement of the water into the plant leaves. From such an initial thought came a life's work and changes in the way we must view universal life. You will enjoy the story as told by Backster. From viewing the traces of the polygraph sensor, the results were different than Backster expected and he noted a surge response that was somewhat like one would measure when questioning a person. As Backster relates: "Well, if this plant wants to show me some people-like reactions, I've got to use some people like rules on it and see if I can get this to happen again."

Later Backster decided to try something that the plant could really feel like using a flame to burn a leaf. It was astonishing to note that it was the THOUGHT of burning a leaf to which the polygraph showed an immediate response! From this bit of history, it must be stated that science now has years of data on plant, animal, and even microscopic life forms and their ability to respond to thought processes.

One interesting example was Backster’s observation of a plant’s reaction on the polygraph when he poured boiling water down the sink. What could hot water going down a sink have to do with a response from his measurements? The answer led into a new series of investigations. It had to be that live microscopic organisms in the drain were killed by the hot water - thus the response. Astonishing that bacteria could emit signals that could be received many feet away by another life form.

As a scientist I can understand why it has taken so long for the enormously important discoveries being made by Cleve Backster to begin to be accepted by the scientific community. It is strongly a part of science’s understanding of life that some type of a brain or nervous system would be required to respond to (or emit) stimuli. How could a plant, an egg, a cup of yogurt, or just some white cells from a person's mouth either respond to or emit detectable stimuli?

Cleve Backster’s book is both a trail of discovery and the slow and grudging partial acceptance by some scientists of the fact that all living cells appear to have some sensitivity to the well-being of other life forms. Science has not, as yet, accepted Backster's discoveries. A scientific fact is best defined as: A series of observations of the same phenomena. This definition implies replication. Backster’s book reports on a variety of replications of his work both by other investigators and by military laboratories.

At the beginning of Chapter 8, Backster includes the following quote from Max Planck: A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and the new generation grows up that's familiar with it.

Unfortunately, even the best of scientists among us have some problems with accepting dramatic changes resulting from new discoveries. This author is well acquainted with the difficulty of "teaching old dogs new tricks." We become so immersed in making incremental advances in our own scientific specialties that we often lose sight of the dramatic changes that are being discovered and, hopefully, gradually accepted.
Backster ends with a discussion of what is needed for the further development and acceptance of biocommunication. What is needed is inexpensive monitoring devices (so that high school students, for example, can replicate and/or extend some of Backster's work). Simple sensing devices are pretty well developed. Yards of chart paper is expensive and so are chart-type recorders. This reviewer suggests that the use of some of the megabytes of computer memory can store an enormous amount of data and should be used for recording and display of sensory changes.

In the Secret Life of Plants, this reviewer read about how a carrot being sliced could emit signals that could be picked up by another life form being monitored. However, if prayer was first used, then the carrot did not emit such signals. Perhaps, the bible has some interesting reason for suggesting that one prayer over the food. Do you pray before slicing your carrots? You may want to after reading Cleve Backster's life's work. Backster also indicates how some cells also go silent under some other circumstances. This effect sometimes makes it more difficult to replicate a given experiment.

Again, this reviewer strongly recommends that you read about biocommunication. It may just change the way you view all of the living world. You may become nicer to your plants.

Review of Primary By Brian O'Leary

Cleve Backster is no ordinary scientist. His path to discovery, so well described in his autobiographical book Primary Perception, brings together both the human and objective elements into a gripping detective story, leading to insights many scientists would not want to touch because the implications are so profound and in some respects contradictory to the materialistic world view that grips contemporary science.

The subtitle well expresses his breakthroughs: Biocommunication with plants, living foods and human cells. Backster's courage and humility in breaking out of the traditional box of Western science provides an inspiration for the rest of us.

As a physics faculty member at Princeton University during the 1970s, I began to have some experiences that shattered my own materialistic paradigm. I became hungry for experiments which would reveal the mysteries of consciousness, of measuring communications of intent with other living beings as a force that transcends ordinary physics and biology.

When Backster's experiments came to my attention, I spent time in his laboratory verifying the extraordinary phenomena on the influence of human intent on the electrical activity of target cells. I was so inspired, I used Backster's work in the lead to my book, Exploring Inner and Outer Space.

The process of Backster's discoveries revealed in Primary Perception is required reading for anyone interested in how science could be done in a better world. Ironically, the humility with which he took on the task made him better qualified to do the work than prestigious scientists at leading universities who have vested interests in traditional science and have avoided this kind of research for fear of
being ostracized by their peers.

It takes great courage to break out of the old, comfortable modes of research (I call it the box of materialism) and go for the truth for what it is, rather than for more limited truths inside the box. Backster's independence is a key to his success, because he is not trying to impress anybody or placate funding sources; he's an authentic truth-seeker, intelligent, honest, transparent, generous with his time, childlike in his sense of awe and wonder with the phenomena, and willing to take the path of discovery wherever it leads.

This book can be easily understood by almost anyone. It's a great read and an essential addition to any library on new science.

Brian O'Leary, Ph.D.

'Primary Perception'—The Secret Life of Life (Part 1)

An interview with Cleve Backster and a look at his seminal work on primary perception

By Ben Bendig
Epoch Times Staff
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There exists a body of research poised to rend apart our modern paradigms—revealing consciousness in places we might not have expected it, and connections between life forms that seem startling and impossible. Imagine coming into a laboratory with a friend, and the experimenter tells you to simply start up a conversation. After some time, the experimenter stops you and shows you a recording that was taken of the conversation. The audio is of the conversation, but the video is of a line that looks something like a seismograph—which is actually a measure of electrical activity that was taking place in a plant that had been sitting in the corner of the room.

You see, perhaps to your amazement, that with every emotional moment between you and your friend, the plant shows a reaction corresponding to the onset of, for example, surprise, disgust, or embarrassment.

And the reaction happens to look a lot like a person’s reaction to the same sort of event.

This is one variety of experiment that demonstrates the phenomenon of what has been dubbed “primary perception” by Cleve Backster, who made the discovery in 1966 in a series of experiments with plants and other life forms. His research suggests that a basic form of communication exists among all life, down to bacteria and constituent cells of larger organisms, and hence may be “primary,” compared to commonly acknowledged forms of perception such as vision or touch.

Backster, a genial and enthusiastic fellow of 85 years, is a former CIA lie detector specialist and has had a deep involvement with scientific research in the polygraph community, where he is highly regarded. He developed the Backster Zone Comparison test in the late 1950s, the technique that is still in general use in military and government agencies for reading polygraphs, and he has run the Backster School of Lie Detection in downtown San Diego, Calif.,
for the last 30 years.

Backster had his work popularized in the book “The Secret Life of Plants” published in 1973, though he first published his findings in 1968. After “The Secret Life of Plants” came out, Backster made appearances on several talk shows and other media, featuring his perceiving plants. But he has also lectured extensively at scientific conferences. It was his research that got people talking to their plants and spurred the phenomenon of the “houseplant.”

Beyond Plants

THE WINDOW TO PRIMARY PERCEPTION: Cleve Backster started his experiments with the plant Dracaena. (Courtesy of Cleve Backster)

“The fascinating part of all this,” he tells me, “it may have started with plants, but it ended up with human cells. By taking a human cell sample in a test tube and testing it remotely, those cells are attuned to the donor, and this to me is amazing; I mean this has all kinds of implications.”

Indeed—Backster has found that our cells respond to our emotions when they are outside of our bodies, even as far away as over 100 miles. When the donor experiences an emotional change, there is a coupled reaction in the cells, which manifests electrically.

“Plants were really just a stumbling block that allowed me to stumble over the phenomenon, and then I kept chasing it for everything that seemed to be causing a reaction in the plants, whether it be bacteria in yogurt, or eggs, and so
Backster found that breaking an egg or dumping it in boiling water will cause a reaction in plants—as if they were sensitive to nearby organisms suffering harm. While one might not think of eggs as having life, it appears they may have some sort of biological activity.

Intriguingly, he also found plants reacting when people used the bathroom next door to his office—which he traced back to urine coming into contact with the disinfectant in urinal cakes.

“I said, if it can cause a reaction, it should be reacting itself; let me figure out how to hook it up,” he says, laughing. “So this is what led me right up the line.”

Backster went on to monitor bacteria, finding reactions similar to those of plants. He also measured electrical activity in eggs, finding that they, too, seemed to respond to the environment. Ultimately, he measured activity in human cells, such as white blood cells.