

SIDDHA: The First Systems Biology

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The Siddhars taught that there is a temple within each of us. But what exactly does that mean? Is this a spiritual concept? And where exactly is this temple located? How do we find it?

Let's start by saying that the concept of a "temple within" is not based on mysticism. The ancient Siddhars were considered radicals because they opposed many of the mystical religious traditions then prevalent in India. They were focused on the quest for Truth and that state of perfection, known as Siddhi. They were against codified scriptures, superstition, blind devotion, and guru worship. Although they were not atheistic or agnostic, they had no real concept of deities as we think of them now. They considered themselves scientists, not mystics.

In the Siddha tradition, everything is related to science: it all started with un-manifest energy, which they called Purusha or consciousness. When consciousness awakens, energy appears and interacts; and then Nature unfolds from energy to matter, through various levels. Siddha is about understanding the body and the physical nature of man. But Siddha concepts concerning the human body and the physical nature of man are quite different from what we learn here in the West.

The Siddhars, as scientists, developed a precise model of the human being based on their experiments and observations. They came to the fundamental conclusion that the human body possessed a complete infrastructure to find truth at all levels of existence. This thesis is a different from the Western view of the human being. Siddhar research led to an important conclusion as real as gravity: each one of us is made up of three separate and interconnected systems: The Visible Body; The Invisible Body; and the Atman, the infinite and unknowable. Western medicine is primarily concerned with the physical or visible body. Siddhars said that if we want to understand the puzzle that is man, we need to take all three systems into account. If we fail to do this, we are not seeing the whole picture.

An important point to remember: Siddhars taught that both the visible self and the invisible self were part of the manifest material world. In short, both the seen and the unseen human systems are described as a continuum between matter and energy --- the visible self, having more matter and the invisible self being composed of more energy. They acknowledged that some things are not visible to the human eye but that doesn't make them any less real and tangible. Here, again, are the three systems that make up the individual man or woman.

The Visible Self-- Discussions of the Visible Self include all the parts of self that can be heard, felt, smelled, seen or touched.

The Invisible Self -- Discussions of the invisible self include our emotional and spiritual selves; they include our five senses, as well as our various states of mind, including the conscious state, subconscious state, unconscious state, and dream state. Our invisible self also includes our memories, thoughts, wisdom, and common sense, which is called Buddhi (and pronounced boodhi). When I was growing up and my mother wanted to remind me to pay attention to what I was doing, she would tell me, “Use your Buddhi”.

The Atman or Soul-- The Siddhas spent very little time discussing the atman or soul and left this in the realm of the unknowable, which could only be experienced by traversing across the visible and invisible worlds within. They focused, instead, on the visible and the invisible self, performing research and study to discover a system to enable each individual to uniquely pursue that journey within, through the right amount of food to support the physical body, and exercises and meditative practices to support the invisible bodies.

Your Home Sweet Home—The Complex System Within

Before we go into the details of how these three interconnected systems operate, we will provide a high-level overview of the different sub-systems. As someone trained in computer science and in applied mechanics, I learned that be it a computer software system or a physical building structure, systems architectures are designed on the principles of: 1. Layers, 2. Transport of energy, and 3. Intelligent sensing. Each layer provides a particular function for the overall system. Transport and communication of energy occurs across these layers through channels or networks, which transfer matter,

energy and information from outside to the inside. Intelligent sensing of events across layers exists to protect and support the overall system.

Consider the architecture of your home. It too has layers. Your home has an outer layer, which is the exterior of the building, which is visible to everyone. This outer layer may have a wonderful design, carvings, and/or glass to make it attractive to those who pass by. The middle layer is the foundation and structure of the building; except for the carpenters and construction people, who built it, few may have seen the internal studs, wiring and structure. The inside of the home is the one that you some can see, after they have been allowed in. It is your “home sweet home”, with painted walls, pictures, furniture and other decorations.

From outside of the building, you bring in piping, electrical and cabling networks, which cuts across the layers to provide water (matter), electricity (energy) and video (information). Most homes have windows, alarm systems or a dog, cameras and other elements to sense what is going on inside and outside, to protect and provide intelligent maintenance of the infrastructure.

This model of your home provides one insight to the architecture that is not that different than the Siddhars model of the human body. In their model, the human body had five layers known as koshas. The first outer layer was what everyone sees, your visible body. The four inner layers, like the middle layer of your home, provided the location of the “wiring “, and communications infrastructure. The innermost point was the place of

the unknown, Purusha, or the infinite. One had to traverse across all the layers to come that innermost point, that “home sweet home”.

Energy is brought in from the outside to you on what they called the Sutratma (or “Silver Cord”). The Sutratma when it coalesced with your body, traversed the inner layers of your body through an internal transmission and communication network known as Nadis. These Nadis also had some major communication hubs, seven of them, known as Chakras. An internal system of sensations and movement provides intelligence and motion for one to move in the outer and inner worlds.

Given the architectural overview using the home as metaphor, we are now ready to explore and better appreciate the unified model of the human building the Siddhars discovered and modeled.

Koshas—Peeling Back The Five Layers Of The Human Body

One of the things I always remember about the temples in Southern India is their complexity. There are multiple rooms, towers, corridors, sanctuaries, and shrines. The temple located within the human body is no less complex. In fact, Siddha teachings describe five separate bodies or selves, which they called Koshas, the inner structural layers of this temple within.

If an ancient Siddhar were to draw an outline of the human body, what would we see?

Well, to begin with, we would actually see five separate outlines, one within each other.

The outline drawing would resemble an outline of those Russian dolls called babushkas that fit into each other. You can only see the outer doll, but when you begin taking them apart, you find new layers. Some people liken the Siddha view of the body to an onion. We take off the top layer, and then there is another, and then another.

The Siddhars taught that there are actually five separate bodies, which they called Koshas. The word Kosha translates as sheath or covering. These sheaths start with the first outermost layer. This is the visible one we can see. They then continue through the other four, all part of the invisible body.

As you read about these Koshas, you will notice that the Sanskrit term “maya” is included in each name. Maya translates as “illusion.” Even though the Siddhars saw the koshas as being part of the material world, they still included the term “illusion” when describing them relative to the ultimate truth, which is unknowable and indescribable. Similar to other Eastern traditions, Siddhas questioned our tendency to believe that what we see is the only reality. Maya is often likened to a veil that clouds our vision and keeps us from recognizing a deeper truth. When we talk about entering the temple within, the koshas are like veils that need to be pulled back in order to find the atman, the essence of who we truly are, the infinite Purusha within each of us. Many Westerners are familiar with Namaste, the Sanskrit phrase of greeting and farewell. When we say, “Namaste” to one another, we are really saying “The truth (or true spirit) within me bows down to the truth within you.”

1st body or Sheath: The Annamaya Kosha.

This is the physical body. Let's look at the word, Annamaya. Anna means food or manifest matter. Maya, as we said, is translated as illusion. Annamaya thus means giving the illusion of food or matter. This first kosha represents all the parts of the flesh and bones person that are dependent on food and oxygen. We can see it, touch it, or find it with current medical technology like x-rays and scans.

2nd body or Sheath: The Pranamaya Kosha.

This is the topmost layer, or the membrane of the invisible body, and encases all the other three invisible bodies. This layer is associated with prana or life force, and hence with life itself. It is an important layer, for it contains the energetic continuum or “electrical network” and bridges the visible body to the more subtle invisible layers. It is also associated with breath. So long as this sheath is there to receive prana and send it out to all parts of the body, the organism is a living, vital being. This 2nd Kosha is more subtle than the first, but it has definite functions. It contains all the forms of Prana and is connected with physical feelings and bodily functions that we associate with being alive such as hunger, thirst, and elimination.

3rd body or Sheath: The Manomaya Kosha.

As we work our way inward, the Manomaya Kosha is called the mind or mental Sheath. However, “mind” in the Siddha System has two parts—lower mind and higher mind. Manomaya is the lower mind. It is connected with the more emotional aspects of the mind and is also associated with the five senses of touch, taste, smell, sound, and sight.

This part of mind experiences a wide range of feelings such as pain and pleasure, doubt and fear, longing and passion. It is also associated with mental practices such as memorization. When you do crossword puzzles, play games like Sudoku and Scrabble, or study for exams in just about all subjects, ranging from algebra to zoology, you are using your manomaya Kosha

4th body or Sheath: the Vijnanamaya Kosha.

Vijnana translates as knowing, and this Sheath represents higher intelligence. This is associated with a level of wisdom that goes far deeper than the ability to get good grades or become an acknowledged Chess Master. When the Siddhar Rishis talked about somebody showing Vijnana Kosha, they were talking about a person who had left ego aside and was wise enough to seek “Truth” with a capital T.

The Vijnana Kosha reminds us to differentiate between the qualities of being smart and clever as found in the 3rd Sheath and being really intelligent and wise as illustrated by the 4th Sheath. There is an amusing tale that I first heard from one of my teachers, which illustrates some of the differences between lower mind and higher mind. This story begins with a village in ancient India that is being harassed by a snake—a large cobra, who bites and has all the villagers so terrified that they are afraid to leave their homes. Finally a Siddha Rishi comes into town, and the villagers tell him their problem. “I’ll go talk to the snake,” he says.

“No,” the villagers tell him. “You can’t do that!”

But the Rishi being a Rishi has no fear, so he goes out in the environs around the village and meets up with the snake. The Rishi has a heart-to-heart with the snake and convinces him that there is more to life than biting and scaring people. The snake is amazingly receptive, and the Rishi teaches him to meditate.

The following day the snake goes out and starts meditating on a rock in the sun. Some villagers, who come by and notice that the snake has lost his frightening persona, start throwing rocks and sticks at it. Bloody and bruised, the snake runs off to hide in a hole. The following day, the same thing happens. The snake is trying to be a peaceful snake, but he is getting hurt in the process and becoming quite discouraged. The next day the Siddhar is out walking and the snake who sees him, hurries up to him and says,

“Listen, I’m here meditating trying to be a good snake and do the right thing, but people don’t understand that I’ve changed. They are really hurting me, and I don’t know what to do.”

“The Siddhar tells him, “I did teach you to meditate. I did tell you not to bite people. But I didn’t tell you to stop hissing at people when they come near you with sticks and stone. You have to have some intelligence and wisdom about life.

Peeling back the Vijnanamaya Kosha—the 4th Sheath and seeing its true meaning means that we will be able to leave fantasy and illusion behind and observe reality--what we are actually doing and what is really happening in the world around us.

The 5th Body or Sheath: the Anandamaya Kosha.

Ananda is translated as bliss, and this Kosha is known as the Sheath of Bliss. Within man, this the innermost Kosha closest to the soul within each of us, is seen as a reflection of Atman. We are most likely to experience this Kosha when we are in the very deepest sleep or deep meditation. Experiencing this Kosha, as Buddha said, is one of the most dangerous experiences. How can bliss be dangerous? The bliss at this stage can be so wonderful, that one can become attached to this Kosha and never want to leave. The Siddhars, recall said that all Koshas were maya, illusion, for they were still part of the material realms, be it visible or invisible. Even this most subtle Kosha is maya, for attachment to this state of bliss may prevent one moving onward to Purusha, the Infinite within us.

The sheaths beginning with the 1st sheath to the 5th sheath traverse a continuum of matter and energy. The first sheath is clearly made up of largely matter; whereas, the fifth sheath is made up of pure energy, leading to the Infinite, Purusha, which is beyond matter and energy, but is pure consciousness or Information, as we will see and explain in more detail in the next Chapter and Part.

Prana - The Energy That Keeps Us Alive

When we talk about the invisible or inner self, we all know what we mean. We know intuitively that the ungraspable invisible self is all about energy. In Siddha, the invisible self is formed from Sattvic and Rajasic energy, and is associated with the basic life force or energy known as Prana.

Prana is the energy that moves across the various Khosas, no different than the electricity and water that moves through your home, in between all the layers. Having Prana means that we are alive. Anyone who has ever witnessed a live birth, or even seen one on television, can attest to the excitement surrounding the moment itself. The almost lifeless looking infant emerges. Suddenly there is a cry. The infant is alive and breathing on its own, apart from its mother. A new life has entered the world. Watchers typically experience an impulse to cheer.

One can perceive our bodies in many ways, but most of us know that we are more complicated than the flesh, blood, bones, and tissue that make up our material bodies. What is that intangible force that enters the body at birth and shows itself with a baby's first cry? Siddhars, like other Eastern cultures, used the word Prana to describe the vital energy that means that we are alive.

Prana carries with it matter, energy and information (consciousness). The Siddha system allows for different kinds of prana or energy. The first, which is responsible for breath, heartbeat, and nerve impulses, is the vital current that shows that we are alive. With each breath we take, prana enters our body and makes its way into the circulatory system and to each cell of the body. Other forms of prana are connected to temperature, digestion, sound, conscious energy, voluntary muscular system, excretion and the body's elimination processes.

In Asia particularly, advanced practitioners of esoteric yoga techniques spend years training themselves to control and manipulate “prana” in their bodies. This practice is known as pranayama. There are many credible examples of yogis who have been able to control breath, body temperature, and other physical actions in ways that are almost impossible to understand and seem almost miraculous (or fraudulent) when viewed by observers who are unfamiliar with these practices.

Sutratma - Understanding How Prana (Energy) Enters The Body

Where does consciousness come from? And how do we get it? Because we are all intrinsically connected to the larger universe, it makes sense that we would be getting our consciousness as well as our essential life force from a source connected to nature. Siddha teachings say that at the moment of birth, consciousness and energy enter our body through the umbilical cord as we take our first independent breath. The teachings about this are very specific. They describe 64 streams of energy that enter the body in this way. These energy streams, which are called the sutratma, carry Prana as consciousness with the information to connect us to the universe. Thirty energy streams of the sutratma travel down; thirty travel up; two travel across in one direction; two more go across in the other direction. In this way, the sutratma branch out throughout the body and create a network of 72,000 channels of energy, known as Nadi lines that connect various parts of the body.

The Sutratma are an important element in the Siddhar spiritual belief system. They are the essential way we (the microcosms) stay connected to the macrocosm that is the larger

universe. As long as we are alive, we continue to receive energy through these streams. Siddhar teachings also say that an energy knot or cord, formed by the Sutratma, at the umbilicus is connected to the inner self and keeps it from floating away from our visible body. At the time of death, that connection is broken, and the inner self is free to separate and prepare for a new incarnation.

The concept of a cord or thread keeping one's inner self-connected to the body is common to other belief systems. Anyone who has ever read or heard about astral projection or travel may remember practitioners talking about a "silver cord" connecting the astral and physical body. Here in the West, those who are interested in more metaphysical studies sometimes quote a "silver cord" reference found in the Old Testament in Ecclesiastes 12: "For man goes to his everlasting home, and the mourners go about the streets. Remember him before the silver cord is snapped and the golden bowl is broken, before the pitcher is shattered at the spring and the wheel broken at the well, before the dust returns to the earth as it began, and the spirit returns to God who gave it."

The Sutratma that bring us consciousness and connect us to the universe have another important function. They also represent the connection that exists between us, as individual beings. As parts of the whole, we are all interconnected.

Nadi Lines - How Prana (Energy) Moves Through The Body

After the Sutratma enter our visible and invisible bodies, they branch out and form Nadi Lines. These are the channels that carry Prana that moves and flows throughout the Koshas. They carry all forms of energy, including mental, emotional, and psychic—even consciousness in the form of energy. The Nadis are like cabling or fiber optic lines providing power for the whole structure that is the human body. The ancients of Siddha viewed the body fundamentally as a matrix of energy. They drew clear pictures of this energy matrix that traverses the entire body like a complex network of rivers and streams. In fact, in Sanskrit, the name Nadi means river. 72,000 of these nadi lines or rivers of energy penetrate every organ, tissue and cell in the body, carrying the life force necessary to keep us functioning.

As yourself a question: How do you feel today? If you are not quite up to par, it may be because your Nadi lines are blocked and your energy is not able to flow. Siddha practitioners believe that your state of health is directly connected to the Nadi lines in your body. If your Nadi lines are blocked, your health is challenged because the organs and systems of your body are not able to communicate and work together. Disease is identified as blockages in the nadi streams of energy. Removing these blockages enables the body to be brought into balance, ensuring that all the organs and systems of the body are prepared for optimal performance. Siddha practitioners use a variety of different modalities to “clear” blockages and cleanse the Nadi lines. These include herbs, massage, yoga, diet, meditation, music, and light.

Rivers of Unseen Energy

It is said that each of us has in the neighborhood of 72,000 Nadi lines, criss-crossing the body every which way. There are, however, three major Nadi lines, and they are of enormous importance in the Siddha system.

Nadi line # One is called: Sushumna

Nadi line # Two is called: Ida

Nadu line # Three is called Pingala

It isn't important to remember these names. It is important to remember what they do.

Nadi Line # One: Sushumna, the largest and most important Nadi runs along the center of the spinal column. It is a river of energy that extends from the 1st chakra at the base of the spine and goes straight up all the way up to the crown chakra. When the channel of energy known as Sushumna is unblocked, energy is able to freely flow up and down through the body and up to the brain.

Nadi Line # Two: Transporting prana from the left nostril, the Ida twists around the spine in helical fashion. This Nadi or energy channel runs between the 1st or base chakra and the 6th Chakra, which relates to the third eye. Ida is associated with the moon and with a more passive and receptive energy. It is said to be “cooling” in temperature and connected to right brain activities such as intuition, feeling, visual skills, and creativity.

Nadi Line # Three: Pingala, which is Ida’s counterpart, transports prana from the right nostril. Like the Ida it twists around the spine, connecting the lower chakras and the 6th. Pingala, which is associated with the hot sun and a more extroverted and active energy, is connected to left brain skills such as logic, organization, and mathematics.

Since each of us has 72,000 thousand Nadi lines criss-crossing every which way, it makes sense that at certain places in the body, these nadi lines will come together and form important intersections. The ancients identified 107 of these intersections, which were seen as energy points or “marma” points. These energy points became the basis of acupuncture points, which were developed by traveling Chinese monks who came to visit the Buddha in India. Seven of these marma points are seen as powerful super-intersections. These are called chakras.

Chakras—Where The Energy Channels Intersect

Chakras are the energy centers of our invisible bodies. They cannot be seen on x-rays, or MRIs or CATSCANS. The Chakra System was originally developed as a Hindu concept in India, but Chakras have a role in Buddhism as well. The word “chakra” means wheel and in drawings, chakras are often depicted as almost flower like spinning centers of energy with a number of petals. The petals represent the number of nadis carrying energy to and from the individual chakra. In the Siddha System, we each have seven chakras. The Chakras located in the lower part of the body are seen as being more instinctual; those on the upper part are described as being more mental. All of these Chakras receive and send out energy through the Nadi channels.

They are found as follows.

1) The root Chakra.

This chakra is located at the base of the spine. If you were to sit down cross-legged, the root chakra is there where your bottom hits the earth, between the base of the genitals and the anus. Much of your life force and prana is stored in the chakra, which keeps you grounded and connected to life itself. The ancients taught that meditating on this chakra gave yoga practitioners awareness of the power of kundalini. When your root chakra is open and appropriately active, you feel yourself as being grounded and at home in your world. When the Root Chakra is inactive and closed, you tend to be uncomfortable in your environment; you may resist change and become more materialist. This chakra is often depicted as having four petals or Nadis branching out.

2) The Sacral chakra.

This Chakra is located in the main Nadi energy channel known as Sushumna at the base of the genitals. It is associated with sexuality and procreation, as well as elimination. When the Sacral Chakra is appropriately open, you are able to express your emotions and have an easier time with intimacy. When it is over-active, you are likely to be over-emotional and your libido may be too highly charged and all over the place. If the Sacral Chakra is closed and under-active, you probably keep your emotions too tightly under-wrap. This chakra is seen as having six Nadis which radiate from its center.

3) The Solar Plexus Chakra.

This Chakra is found in the Sushumna Energy channel right near the navel. Associated with the solar plexus and the element of fire, it controls the liver and stomach. The Solar Plexus Chakra is associated with self-esteem and confidence. When it is appropriately open, you have balanced sense of self-esteem. If it is over-active, you might be accused of being “too full of yourself.” If it’s underactive or closed, you will tend to feel indecisive and unsure of yourself. The Solar Plexus Chakra has ten radiating Nadis.

4) The Heart Chakra.

This Chakra is located in the Sushumna Nadi energy channel in the region of the heart and is associated with all heart function and the element of air. Located near the heart, it is associated with our ability to feel love and compassion in its highest form. If it is over-active, the people around you may tend to feel “suffocated” by your love. If it is under-active, your nearest and dearest might accuse you of “holding back” and being unable to open up to love. The Heart Chakra is shown with fifteen nadis.

5) The Throat Chakra.

This Chakra, located within the Sushumna Nadi at the base of the throat, is associated with the element of ether. This chakra is related to all forms of self-expression including speech and art. If your throat chakra is appropriately open, you have no difficulty expressing yourself. If it is over-active, people around you may feel that you are overly dominating; they may say that you “never listen,” and wear them down with your

opinions. If it is under-active, you have a difficult time “finding your voice.” This chakra is depicted with sixteen Nadis.

6) The Third Eye Chakra.

Located within the Sushumna Nadi, between the eyebrows, this chakra is sometimes called the Brow Chakra and referred to as the seat of consciousness. It is often associated with the pineal gland. When it is appropriately open, you are able to be intuitive and perceptive without losing sight of reality. When it is closed, even friends might say that you lack perception and are unable to be open-minded. If it is over-active, you will have a tendency to live in a fantasy world. The third eye is often used as a symbol of enlightenment. Yogis train the third-eye in order to make their visions manifest in the real world; it is also used to help expand consciousness. This chakra has two nadis, which radiate from its center..

7) The Crown Chakra.

Located just above the crown of the head, the Crown Chakra is associated with activities of the brain. It is often described as radiating light and is associated with wisdom and cosmic consciousness. When this chakra is appropriately open and balanced, you are aware of what is going on around you in the world and are able to incorporate spirituality into your life. If it's over-active, you may have a tendency to live in your head and be too cerebral. If it is under-active, you may close yourself off to spiritual or more evolved aspects of yourself. The Crown Chakra is said to have a thousand Nadis radiating out.

Our Visible Sense Organs And Invisible Senses

In Siddha science, our senses represent way in which we are able make a connection between the visible and invisible. They are the tools we use to perceive both the visible and the invisible world, and guide us on our paths inward. They provide us sensations and feelings. In the core and hidden teachings of the Siddha system, the key to health, wellness to support the journey within, is to found through the sensations! The purpose of food, exercise, stillness is to connect with our highest sensation: intuition, the sixth sense. Right food, exercise and stillness activities are personalized to support the development of intuition, which comes from the clearing of the “wires”, the cleansing of the Nadis and Chakras, so one can perceive things as they really are, not as what we would like them to be, maya.

Observations of these sensations, gross and subtle, is one of the most powerful ways to become aware of one’s cravings and aversions. These cravings and aversions become the “static” or “noise” that block our Nadi and Chakra communication network. Therefore, as you can imagine, ancient Siddhars spent a great deal of time thinking about how the senses operate and function. They started by describing the five sensory organs themselves. These are called Jnana Indriyas, which translates as knowledge of the senses.

Organs of the senses

Ears..... Hearing

Skin..... Touch

Eyes.... Sight

Tongue.... Taste

Nose..... Smell

This is not very different from our Western approach to the senses. However, the Siddhar System then adds five actions that are associated with the senses. These are called Karma Indriyas or Actions of the Senses and are further associated with body parts. Interestingly, in the Siddha system, actions, such as talking, walking, and grasping thought of as being connected to and motivated by the invisible self.

Actions of the Senses

Larynx Associated with talking

Arms.... Associated with the act of holding

Legs.... Associated with walking

External genitalia....Associated with sexual pleasure

Urethra, Anus, and Reproductive organs.... Associated with excretion and reproduction.

Food, exercise and stillness practices were designed by the Siddhar to support awareness and to clear the Nadis and Chakras, to enable Prana to flow across all the Koshas, to enliven the Temple within to light the way to Purusha itself.

Summing Up:

Sutratma brings Prana into the visible and invisible body. These Sutratma form Nadi lines. Nadi lines carrying Prana as matter, energy and information to all parts of the body converge at energy centers, known as Chakras. This energy and information is then processed and sent back out through the Nadis to all body components. The Sutratma and Nadis (both parts of the invisible body) are the connective tissues that guide us into and through the temple within. They are the cabling that power the whole system. Without them, your body would be like an unfinished building. It would have a floor, roof, and sheetrock walls, but there would be no heat, electricity, phone service or cabling connecting it to the rest of the world.

Siddha: The First Systems Biology

One of the goals of modern day Systems Biology is to develop a Systems Medicine that is both effective and predictive. As a systems biologist, my goal is to understand and model life at its most accurate. An accurate picture of life, therefore, must include both the seen and the unseen. If we are only looking at what our eyes show us, we may be missing something huge. This is not an original concept; science tells us that there is an entire spectrum of light and sound that we can't see or hear. Many birds and insects are aware of shades of infrared and ultraviolet light that we can't even imagine. Our ears are able to hear sounds with a frequency between 20 and 20,000 hertz. Dogs, however, have sharper ears; they can pick up sounds up to 45,000 hertz. This is real. To understand life, we have to recognize and understand both the seen and the unseen.

The Siddha tradition is part of my heritage, but that isn't the only reason why I think it is appropriate for an open-minded scientific examination within the context of a modern world. There are too many historical examples of people being unwilling to accept scientific thought that was ahead of its time. The most obvious was Galileo who was subjected to house arrest because he rejected a geocentric view of the universe and defended Copernicus's heliocentric model. Within the last two hundred years, there have been many times when technological advances made us aware of all the things that are "out there" that we simply can not see with our eyes alone. Imagine what our great-great-great-grandparents would have had to say about x-rays, microwaves, and radio waves, and the signals that give us television, and cell phones. How about the internet? In light of all the recent scientific advances, the Siddha view of an Invisible Self seems relatively easy to understand and accept.

The Siddha System understood that the world is comprised of the visible and the invisible, the seen and the unseen. Their models of the universe and the human body were created centuries ago, and provide a model of the human body, which is the first Systems Biology. The Siddhars over thousands of years developed and organized this holistic system of understanding based on observing patterns of interaction. Siddha's lingua franca, while foreign to most of us in the West is understandable, if one is willing to see the logic and nature of its interconnectedness. Each person's psychological state, for example, is characterized as Gunas that can hold the patterns of Sattvic, Rajasic, and Tamasic energy. These Gunas give rise to both the visible body and the invisible body. The five elements or Panchabhutas, formed from the Rajasic and Tamasic Gunas, mix to

create material life that manifests itself in human body types known as the TriDoshas—Vata, Pitta, and Iyyam (Kapha). These TriDoshas then give rise to tissues, organs, organisms, ecosystems, and the entire cosmos. In addition to the visible, the Siddhars modeled the invisible body, emerging from the Sattvic and Rajasic Gunas, which gave rise to the Temple Within, composed of the Sutratma, Nadis, Koshas, and Chakras. This Temple Within, when fed with the right food, exercise and stillness practices, personalized to our constitution, enlivened our sensations, to clear the blockages across the Nadis to realize the Infinite, Purusha, within us.

An important, but often ignored, point in the description of Siddha and related forms of traditional medicine is that the Siddhars operated on multiple levels in a progressive manner. They focused on V,P,I (or K) and body constitution as a starting point, to help their students understand how Nature’s forces manifest themselves. However, the Siddhars realized that the invisible body within each of us offers us the opportunity to transform our own constitutions and become more than the material realm described by the Pancha Bhutas. In modern terms, from Systems Biology and as epigenetics is revealing, we can firmly say that we are more than our genes. Each of us has the ability, through our thoughts and actions, to move the forces of prana within the invisible world known as “the temple within.” In this way, we are able to move beyond our genes and the constitution we received at birth. This point aligns with the recent findings of Systems Biology.

Here in the West, the study of System Biology is just starting to model the whole human system by attempting to use modern instrumentation to understand and interconnect all molecular interactions bottom's up from atom to cosmos. Siddha offers a model and architecture, which can only serve to accelerate modern System Biology's trajectory towards holistic understanding of life. Such understanding can only evolve if we can bridge the worlds of East and West on a scientific foundation.