PART ONE
An Outsized, Outrageous Organ — by George Leonard

We were 12 billion years or more in the making, our body the stuff of stars, our mind a mystery. We were born for learning, for journeying through inconceivable new worlds, destination unknown. We started in Africa beneath the trees and out across the open spaces at a time when there were no words, then traveled far and wide to light this world with speech and fire. From the beginning, we were extraordinary. Our Stone Age ancestors had brains as large as ours, brains with the capability, in potentia, to serve in piloting a spacecraft, playing a Bach partita, designing a computer, and understanding abstract mathematics. Even today, we are mostly untapped potential.

With one daring evolutionary gamble--the upright stance--our pre-human ancestors had set into motion a process that would lead to complex tools, cooking, agriculture, art, language, religion, cities, nations, worldwide communications, flight, the venture toward other worlds, and--perhaps most important of all--self-aware consciousness. All this would follow the earliest upright ape-human within a mere wink of evolutionary time. At last, after 12 billion or more years of life on this planet, the universe we know would get eyes with which to view itself.

A million billion connections

Before discussing the evolutionary leveraging that has made us what we are, let's examine the organ which in terms of size, function, and consequences most sets us off from our primate predecessors. Imagine your brain: three-and-a-quarter compact pounds of wet, slippery, blood-drenched protein and fat: the most complex, highly organized entity in the known universe. Weighing in at some two percent of our total body weight, it uses some 20 percent of our cardiac output. It is populated by as many as 100 billion twinkling neurons (brain cells), some with up to 10,000 or even more connections to other neurons.

Over 70 percent of the neocortex, the outer layer of the brain, is committed to no particular function and is thus available for learning beyond anything we could presently imagine. The neo-cortex alone has some 10 billion neurons, with at least a million billion connections. If you tried to count just those connections, one per second, you'd finish counting 32 million years from now. The sum total of possible connections among all the neurons in the brain greatly exceeds the number of atoms in the known universe.

Beyond computation

Our neurons, contrary to popular assumptions in this electronic age, are not mere computer-like nodes. Many of them are versatile, complex personalities in miniature, able to learn new sensitivities, new behaviors. Not only can our neurons communicate directly with other neurons through electro-chemical synaptic connections; they can also tune into news of distant events in the brain through radio-frequency signals (both AM and FM) which influence the probability of firing. This occurs through resonance patterns caused by the cooperative firing of neuron groups, and through communications passed along by neuroglial cells.

These jelly-like neuroglial cells, once thought to be mere packing material between the neurons, are now understood to possess information storing and processing capabilities of their own. Neurons by the millions are also to be found in the spinal cord and gut, helping to direct our inner works, modulating messages between the brain and the rest of the body.

Add to all this a body-wide information system of a type that is entirely lacking in any computer. Small molecules called peptides are constantly swept along in the blood and cerebrospinal fluid, joining the brain with the rest of the body, causing complex and significant changes in thought, emotion, and immune function. Nearly a hundred different peptides have already been identified. Many more perhaps exist.

Some researchers in the comparatively new field of psychoneuroimmunology (PNI) argue that the interplay of peptides with peptide receptors on the surface of cells throughout body and brain carries considerably more information than all previously discovered brain mechanisms combined. Imagine a pharmacy with well over a hundred potions that can be mixed in all possible combinations and proportions, and you can begin to understand the power of this chemical information system.

Our ever-youthful brain
The architecture of the human brain was once thought to be dynamic in infancy and childhood, becoming increasingly static as we grow older. Recent research has shown that the adult brain is more dynamic than static, constantly reorganizing itself.

It was also once believed that after childhood we steadily lose brain cells which, once lost, can never be replaced. Decades ago, it was discovered that we can grow new dendrites, the microscopic tentacles that reach out from each neuron to make connections with others. More recent research reveals that if we stay active and keep learning we can also grow new neurons, from birth to death. Other factors being equal, the brain of an active, playful, lifelong learner could contain far more neurons and even weigh more, up to 30 percent more, than otherwise would be the case.

Human vs. computer
In the 1960s, the top computer experts in the field were confidently predicting that by the 1990s we would have true Artificial Intelligence (AI). The AI ideal was typified by Hal the Computer in the 1968 Stanley Kubrick movie, 2001: A Space Odyssey. Hal could not only discuss technical matters but also engage in casual conversation with human astronauts and apparently feel and express love, sorrow, and fear.

The once-mythic year 2001 has come to pass and Hal is nowhere in sight. Undaunted, some present day computer mavens are predicting that, by the year

2030, computers will be far more intelligent than humans. These machines, they theorize, will by then have learned to reproduce and, if they so desire, can dispose of all carbon-based life and inaugurate the BES era (Better Evolution through Silicon).

Likely? Don't count on it. Computers are marvelous. In many ways they are and will increasingly become more marvelous than we might have imagined, especially in terms of the large and complex megacomputer we call the Worldwide Web. What the computer mavens have generally failed to recognize, however, is the even more marvelous potential of the human body and brain.

Yes, a computer can defeat the world's champion of chess, a game that depends on prodigious memory and blazing computational speed. But it can't really understand a book written for eight-year-olds, can't walk gracefully, can't engage in casual conversation, can't feel, can't dream, can't deal with ambiguity or easily shift context, and, essentially, can't create. The computer is fast and clean in its operations. The human being is comparatively slow and messy. But in that very messiness, that ability to create and deal with ambiguity, lies a significant part of the human genius. Our ability to build things never before built, think thoughts never before thought, create words and music and art never before created is unique. To put it simply, the ultimate creative capacity of the human brain is for all practical purposes infinite.

PART TWO
How Human Sexuality Helped Create Our Large Brain — by George Leonard

In less than five million years, starting with our ancestors, the Australopithecines, the hominid brain was to triple in size. Such explosive brain development was itself a risky evolutionary gamble. Our brain is an extremely greedy organ. Every minute, enough blood must be pumped through it to equal its own weight. Any animal with a disproportionately large brain has to find considerably more food to feed itself and its offspring than do other animals of the same size and weight. The need for even ten percent more food than a competing species in the wild might mean extinction. Why and how did such an organ evolve?

In this case, anatomy was destiny; the upright stance—first seen in Australopicicus—set the runaway growth of the brain in motion. Hands and arms, no longer needed for locomotion, were free not only to carry objects and offspring over long distances but also to explore and manipulate the environment, to make things. The importance of skilled manipulation is reflected in the disproportionately large amount of the motor cortex in the modern brain devoted to controlling the hand, thumbs, and fingers.

The millennia passed, the glaciers of the Ice Ages advanced and receded, and our predecessors beyond Australopithecus learned to make tools and weapons, to use fire, to hunt cooperatively. Such manipulative and technical skills played a part in the development of the large brain; still, they probably don't demand nearly enough mental power to create a need for the overgrown organ in our skulls.

What does? To get a crude answer, simply tune in to the daily television soap operas. Just to deal with the subtle, complex and often convoluted web of relationships, alliances, status-seeking, gossip, flirtation, manipulation, and deception involved in any intense social grouping requires as much brain power as one could easily imagine. By the time we come to the large-brained Homo specie that lived in hunting and gathering bands of around 30 men, women, and children, dealing continually with intra- and inter-band relationships, we confront a social chess game of daunting complexity.

Language and self-aware consciousness might well have developed in the service of the prehistoric soap opera. Neither toolmaking nor signaling in the hunt would seem to require the intricate syntactical language that exists in even the most primitive surviving hunting and gathering bands. And self-aware consciousness itself can be seen first of all as an aid to successful social interaction: If I know what I'm feeling or thinking about something, then I can more skillfully understand and predict what someone else is and will be feeling and thinking. With language and consciousness, of course, comes a new kind of evolution—cultural evolution, which can be faster by far than biological evolution, and capable of wonders and horrors beyond the power of the primitive mind to imagine.

Leveraging the greedy human brain
How could hominid evolution leverage such a large organic change with such a small amount of genetic variation? First of all, the explosive growth of brain size in the Homo genus actually required very little in the way of new DNA. The anatomical modifications necessary for the upright stance and the human hand probably took more. The basic pattern for the human brain was already set, if modestly, in the brain of the ape. An ingenuous bit of genetic leveraging made it possible for this basic ape brain to become much, much larger, more complex, more capable in the human.

Here's how it works: Simply change the rate of human growth and maturation, a change that requires little more than simple on-off switches in the genes to control the timing and thus slow the maturation of the human individual. This results in the baby Homo sapiens being born quite immature and helpless—a fetus actually—and staying relatively helpless for many years after birth, years during which the brain can keep on growing. A young chimpanzee starts feeding itself not long after birth and can take care of itself by age four. A young human needs parental care until around age eight. The chimpanzee's brain grows only about a third after birth. A human's brain at birth is already larger than an adult chimp's, almost too large for the head to get through the mother's pelvic girdle. And it goes on to triple in size before it stops growing at around age seven.

This strategy of stretching out an organism's period of immaturity comes under the heading of neoteny. It's this neoteny, in fact, that most clearly distinguishes us from the apes, and not just in brain development. Note that a human baby and a chimpanzee baby bear a strong resemblance, while a grown-up human looks more like a human baby or chimp baby than does a grown-up chimp. We might go so far as to say that a human being is essentially a chimpanzee that is very slow in growing up. We might also say that some of the smartest humans, the geniuses among us, the Mozarts and Einsteins, never quite grow up.

Primitive parents put to the test
This prolonged immaturity, though simple to program, creates one more of those tricky situations that have marked our evolution. In most primates, the males are considerably larger than the females. Such disparity, known as dimorphism, generally goes along with the harem system of mating. Male gorillas, for example, weigh nearly twice as much as each female and have a harem of some three to six females. Australopithecus males, also significantly larger than females, were probably polygamous, the larger, dominant males mating with more than their share of females, leaving a horde of restless, dissatisfied bachelors. As the Homo specie evolved, however, the difference of size between the sexes decreased, down to a mere 15 percent in Homo sapiens. This suggests more pair-bonding between the sexes, less competition and more cooperation among males, along with the food-sharing we have seen in hunting and gathering cultures.

Without these conditions, the large brain couldn't have come into being. The equation is simple and urgent: The development of the large brain required prolonged immaturity and a dependable, larger-than-usual food supply, both of which, in the wilds, required fairly stable, two-parent families, not single mothers in harems. To make the equation even more critical: while our evolutionary cousins, the chimpanzees (with a four-year dependency period for their young) tend to have only one baby every four years and thus only one dependent at the time, humans (with an eight-year dependency period) might have several children over eight years. This produced an evolutionary breeding advantage, but it also put human parents to the test of having several slow-maturing dependents to care for at once.

Human sexuality and the large brain

What could the process of evolution do to encourage pair-bonding and discourage destructive male sexual competition? In yet another display of skillful leveraging, evolution came up with two unique conditions that secured a large and lasting return for a small genetic investment. The human female, unlike other primate females, developed breasts that are full and rounded all the time rather than only during lactation. More important, the females achieved freedom from the sexual limitations imposed by the estrus cycle.

The full breasts served as sexual attractors. Freedom from the estrus cycle—rare among mammals—encouraged long-term pair-bonding by making the female sexually available and active all the time while discouraging the fierce male competition that prevails where females can be sexually active only during certain highly charged periods. It would be hard to imagine that the prolonged immaturity necessary for the development of the large brain would have been possible if the hominids hadn't evolved away from the more common primate sexual pattern, with its single-parent families and recurrent and disruptive male sexual competitions during female estrus. Human societies have explored many kinds of sex arrangements, but even now the most common pattern, worldwide, is monogamy with occasional clandestine affairs.

Consider the legacy. Despite the harsh and often bizarre sexual repression practiced by various societies through the ages, human beings generally enjoy not the most prodigious (lions are known to have 30 orgasms in one hour) but the richest, most varied, and most continually accessible erotic life of any species. Human sexuality transcends procreation. Our ardent desire has served from earliest times not just to ensure reproduction and survival but also to create enduring bonds of love and care, crucial elements in our definition of the human potential. This gift of Eros echoes an ancient necessity: the nurturance of the burgeoning human brain, from which, in time, came complex language, self-aware consciousness, and our highest esthetic and spiritual aspirations.

PART THREE
The Wimps of the Wilds? — by George Leonard

There is a profound wisdom in the body, in the pulsing of the blood, the rhythm of the breath, the turning of the joints. Once we are aware of its subtle power, the body becomes a sensitive antenna for tuning into nature and other people. It can serve as a metaphor for every human thought, emotion, and action. It is the royal road to the unconscious. It is a small, handy model of the universe. All the books, computers, and electronic networks in the world contain only a miniscule fraction of the information it takes to create one human body.
— George Leonard & Michael Murphy, *The Life We Are Given*

In our ITP practice, we often employ the body as a wise and sensitive teacher, skillfully helping us achieve the awesome potential in every aspect of our being, even in our ability to sense emotional states. But there is also the body simply as a physical entity through which we meet, influence, and are influenced by the physical world. It is here that we often tend to underestimate our own potential skill and power.

I can't remember my ninth-grade science teacher's name but there's something she once said to our class I've never been able to forget. She told us that the only way our species survived during prehistoric times was through the use of our superior brainpower. She went on to explain that we had no bodily weapons to speak of--no fangs, no claws, no tusks, no horns, no thick fur or tough protective pelts. Not only that, we were comparatively slow of foot. We were, in short, the thin-skinned, big-brained wimps of the wilds.

Such a characterization seemed at first to make sense, not just to me but also to most people. Our science fiction, for example, has often tended to see humanoids of the future as weird creatures with shrunken bodies and heads like balloons. But in the mid-1960s, when I began making a serious study of the human potential—body, mind, heart, and soul—I was forced to question the usual characterizations of the human individual as a weakling among animals.

Yes, we might envy the blazing sprint speed of the cheetah, the prodigious leaps of the kangaroo, the underwater skills of the dolphin, and the gymnastic prowess of the monkey. But, as my studies suggested, no animal can match the human animal in all-around athleticism. If we were to hold an imaginary mammal decathlon with events in sprinting, endurance running, long jumping, high jumping, hurdling, swimming, deep diving, gymnastics, and throwing, other animals would win most of the individual, specialized events. A well-trained human, however, would come up with the best overall score. And in endurance running and throwing—and probably gymnastics as well—the human athlete would outperform all other animals.

Surviving primitive people, in pursuits lasting up to two days, are known to have run down many animals known for their great speed: the deer, horse, steenbok, gemsbok, wildebeest, zebra, kangaroo, as well as the pronghorn antelope, one of the fastest of all mammals. This in spite of the fact that our way of running is relatively slow and inefficient. (The energy cost of running on two legs is about twice as high as running on four.) But overheating is the ultimate constraint in endurance running, and the human ability to dissipate heat is unparalleled.

Naked speed and stamina

Our unique nakedness, in fact, most likely evolved so that our evaporative cooling system (we have the most efficient sweat glands in the animal kingdom) would work even better. In addition, due to our upright, bipedal stance, we absorb only one-fourth the radiant heat absorbed by four-legged animals of the same size when the sun is overhead, while the copious hair on our heads shields the skull and shoulders from the sun.

Our bipedalism also allows us to breathe at the most efficient rate no matter what our speed, while four-legged runners are generally limited to a certain breathing pattern for each gait. In pursuit of horses, American Indians managed to make them run between two gaits, thus throwing off the rhythm of their breathing as well as the efficiency of their running.

Even our unusually large adrenal and thyroid glands predispose us toward a prodigious athleticism, tending to increase the levels of those hormones that help the muscles use fatty acid and glucose efficiently. And our omnivorous diet itself, especially our capacity to load up on carbohydrates, gives us an edge over carnivores and most other animals during lengthy bouts of strenuous exertion.

The marvelous human hand

Just for fun, let's say that our evolutionary forebears made a deal with nature. We would give up fangs, claws, tusks, and other fearsome bodily weapons for one unique feature, our highly complex and capable hands. We are rarely if ever taught in school that this would turn out to be one of the best deals any species has ever made.

The evolutionary journey toward the development of the modern human hand was already well underway some four million years ago in a species of small and small-brained African apes named Australopithecus ("Southern Ape"). According to skeletal remains, this rather diminutive creature walked fully upright and, though it did not have fully opposable thumbs, as we modern hominids do, could pick up a stone and throw it overhand, as a weapon. This required numerous evolutionary changes from the hands of apes that had evolved earlier. The chimpanzee, for example, can also throw sticks and stones, but only underhand.

Some paleoanthropologists maintain that the development of the human hand not only preceded the growth and complexity of the human brain but also played a major role in creating it. We're so accustomed to our hands that we're generally unaware of their anatomic complexity and oblivious to the subtlety and intricacy of their operations. Watching them for a couple of hours while paying close attention to the sensations of touch that often accompany their movements can be a revelation.

Our hands, in fact, easily trump fangs, claws, and tusks, whether used to throw sticks and stones or spears, wield clubs or swords or slings, fashion clothing from animal skin and fur and cloth, build protective fences and houses, and finally create a technology that reaches across much of the known world and, beyond that, into space.

Ultimate athletes of planet earth

Before considering what space exploration might bring, however, let us travel back in time some 100,000 years and imagine a small group of males of our own species (homo sapiens) walking along somewhere on the present-day Serengeti Plain. The sun is high and our ancestors are dressed only a sort of loincloth. They are carrying spears and singing as they walk. About a hundred yards to the right are a pride of lions. The hunters do not change course, nor do they stop singing.

The lions watch them as they pass. They do not attack. They know something my ninth grade science teacher didn't know. These creatures who walk on their hind legs and carry strange objects are by no means the wimps of the wild. To the contrary, they—and we too, with proper training and long-term practice—must rank among the most accomplished athletes of the planet upon which we all now live.

PART FOUR
Speculations on Our Emotional Potential — by George Leonard

Ever since Michael Murphy and I conceived of Integral Transformative Practice™ in 1991, we've called it "a long-term program for realizing the potential of body, mind, heart, and soul." Thus far in these Chronicles, I've written about the potentials of mind and body. Now we come to the human "heart" or emotions, a subject that might seem too ambiguous or even ethereal to be addressed in terms of potential.

Actually, the feeling realm plays a crucial role in our lives, as reflected in the very structure of our brains. The evolutionary neuroanatomist, Paul MacLean, was first to call the human brain a triune (threefold) brain, which makes it easier for us to understand where most of our feelings originate. Here are the three brains that make one:

1. The reptilian brain. The first and most ancient of the three is simply an unprepossessing knob at the head of the spine. This structure regulates heart rate, breathing, and chemical balance throughout the body. For reptiles, it also offers a few stereotyped instructions for action, such as attack and escape from attack. For us humans, it's only the first and most primitive of our three brain structures. But it's the one and only brain that reptiles — snakes, lizards, alligators, crocodiles, turtles — possess. And it has very little if anything to do with emotions as we think of them, not even regarding the reptiles' own offspring. Newborn snakes move fast, simply to avoid being eaten by their mothers.

2. The limbic brain. This structure, wrapped around the reptilian brain, evolved along with the mammals. It was discovered and named in 1879 by a French surgeon and neuroanatomist named Paul Broca, who called it "le grande lobe limbique." Today we refer to it simply as the limbic brain or limbic system, and we know that, even though it has a number of discreet parts with specialized functions, its most important overall function lies in its ability to deal with the feelings. It registers love, fear, anger, enjoyment, surprise, disgust, sexual pleasure, and the like, offering us mammals many advantages, including freedom from the simple, repetitive behaviors of the reptiles.

The greatest evolutionary advantage of the limbic brain has to do with its effect on the care of the mammalian young. Due to the limbic system, a lioness, not less than a chipmunk, possesses powerful feelings for its offspring and will do whatever possible for their protection and nurturance.

3. The neocortex. The most recent and, especially in the human, by far the largest component of the triune brain is the neocortex (neo -"new," cortex - "bark"), which is wrapped around the limbic lobe just as the limbic is wrapped around the reptilian. This is the brain of language, logic, and all abstract thought. It's the brain that can devise a way to fly to the moon, to figure out the laws of gravity, to write exquisite poetry and music— and also to kill thousands of people because they "believe" in a different system of worship.

A much thinner version of the neocortex exists in primates other than human, and an even thinner version in other mammals— your pet dog or cat, for example. The human neocortex, however, is truly monstrous, comprising two-thirds the mass of the entire human brain. Because of its great size and world-shaping ability at abstract thought, the neocortex, you might suppose, rules the triune brain. Actually, in the nitty-gritty of individual human life, the limbic brain trumps the neocortex. It takes significantly longer and is more difficult for the neocortex to influence the limbic system than for the limbic system to influence the neocortex. And the limbic role in sharing feelings with others, as we'll see, can significantly influence our well-being— and even the survival of our infants and young children.

Human society's war against feelings

Over the eons of evolutionary time, the three brains now seen in humans developed and came together to form a single brain. Connections developed among them so that they could, in many situations, act with a common purpose. At the same time, however, each of the three maintained a significant autonomy. The limbic brain, for example, continues to dominate the feeling realm, thus demonstrating again and again the powers of shared feelings in our very survival— and the recurrent war against them.

Early in the last century, when the germ theory of illness was at its height, a number of experiments were conducted in foundling homes and institutions: infants were kept clean and warm and well fed while human contact was reduced to an absolute minimum— no caressing, no baby talk, no feelings. All the infants in these experiments became sickly and lost weight. Many died. Ironically, the more hygienic and "logical" the treatment, the more babies contracted such contagious diseases as measles— just what their guardians were trying to avoid. Death rates often topped 75 percent.

The human limbic system is the largest and most active of that system among all animals, and thus we are potentially the most emotionally advanced animals on this planet. But there are more than a few societal forces working diligently to turn off our feelings and thus dull our empathy for others.

For example, surveys conducted at the end of World War II revealed that a majority of American infantrymen never shot to kill an enemy soldier, and that the fear of killing another human being often topped the fear of dying. Drastic measures were taken to remedy this situation. In rifle and machine gun practice, simple bulls-eye targets were replaced by realistic shapes of enemy soldiers that pop up randomly on the target range, designed as much as possible to resemble a battlefield. The basic idea was to accustom our soldiers to killing by making the enemy ostensibly human but actually something less than human. This sort of conditioning might be appropriate for soldiers going into battle, but, sadly, we've witnessed the tragic misuse of such training among some members of our armed forces.

This sort of dehumanization can easily go too far not just in the military but in the culture at large. You have only to turn on your television or go to an "action" movie or play video games, and you'll witness a whole culture being indoctrinated in destruction and death. More and more television commercials feature scenes of car crashes, houses and people blowing up, whole cityscapes collapsing. And should you surf through all your TV channels, the odds are good that you'll be confronted with one or more close-up views of that icon of our age, the handgun. Only time will tell how we abide these repetitive attacks on our positive feelings.

Just another type of "intelligence?"
Daniel Goleman's best-selling 1995 book, Emotional Intelligence, like those of the more research-oriented works that preceded it, has treated the emotions simply as another form of "intelligence." Goleman's book promises, as did Dale Carnegie's in 1936, that by being sensitive to other's emotions, you can Win Friends and Influence People. The language among these writers is analytical, strategic, and often abstract; that is to say, straight from the neocortex. Such books and studies and the attitudes and actions they suggest can be helpful, but in this Chronicle I would like to explore a deeper and more mysterious domain: the human body itself.

The limbic brain has little or no ability with language or abstractions of any kind while the neocortex can describe feelings brilliantly but doesn't feel them directly. The limbic brain, however, has a very effective though often ignored way of signaling specific feelings, which is through the agency of the human body. The emotion of anger, for example, is likely to produce a tightening of the muscles throughout the body, especially the front half, with the jaw thrust forward. Fear generally creates trembling and a distinctive, wide-eyed expression. "Falling in love" can cause a dreamy look and bouncy way of walking. Erotic arousal has its own rather dramatic means of bodily expression.

Some feeling states, especially those constituting facial expressions, appear not only to signal specific feeling states but also to be essentially the same across all human cultures. In the 1960s, a young psychologist from San Francisco, Paul Ekman, began traveling to such places as Brazil, Argentina, and Japan to see if people from those lands all exhibited the same expressions for the same feelings. He then went deep into the New Guinea jungles and filmed isolated tribes that had never met an outside culture. After viewing 100,000 feet of film, he had no more doubts: certain facial expressions along with their meanings can be read as a universal language. Such familiar expressions, it must be said, are easy to decipher — and, if genuine, originate largely in the limbic brain.

The human face, however, is the only part of the body where the skin is attached directly to the nerves just beneath it, and thus can be specific in displaying feelings. In the rest of the body, the expressions of feelings are less obvious and take more skill and practice to decipher. The question remains: how do emotions get from the mostly nonverbal limbic brain to the highly verbal neocortex? How are they translated? We can speculate that the limbic system transmits them directly to various parts of the body, the best — and generally most ignored — feelings receiver we have.

The body plays the part, metaphorically, of a radio or television set, receiving, decoding, and displaying specific emotions originated in the limbic system in bodily forms that can be "read" by the neocortex. The neocortex, with its well-honed verbal skills, can find words for the limbic transmission ("I'm really sad" or "I'm quite disgusted" or "I've never been so happy") then choose to report the feeling to a friend or simply to the self.

The body as teacher

In 1965, while doing reportage for a major magazine article on the human potential, I had he good fortune of meeting Michael Murphy, the co-founder of Esalen institute in Big Sur, California. Murphy and the Institute were to become especially significant in my life. It was a period of high excitement at Esalen concerning the importance of the body. This wasn't just in dealing with its muscular-mechanical operations, but in learning to understand its role as a keen and accurate judge of previously hidden feelings.

Numerous "Body Workers" from the U.S. and other countries migrated to Esalen during the 60s and 70s, each with his or her own form of bodywork. I experienced various forms of this work and was at first greatly surprised to be asked after a certain manipulation, something on the order of "What are you feeling right now in your solar plexus?" I soon discovered that such questions generally yielded helpful answers, mostly positive. In 1970, I began the practice of aikido, a Japanese martial art known to be the most difficult of the arts to learn. I've continued practicing up to the present and now hold a fifth-degree black belt. Perhaps the most important— and totally unexpected— gift that has come to me from this art is a related practice for getting in touch with our own bodies.

My first aikido teacher, Robert Nadeau, had developed a series of exercises inspired by aikido, but without the complex moves, the strenuous falls, of the martial art itself. He called it Energy Awareness. After apprenticing with him on this material while continuing the martial art, I developed a body-oriented practice that came to be called Leonard Energy Training or simply LET. Since 1974, I've had the opportunity of introducing this practice to many people throughout the U.S. and in other countries as well.

In 1976, fellow aikidoists Wendy Palmer, Richard Heckler, and I started our own martial arts school, where I taught LET as well as aikido. LET has also played a key role in Integral Transformative Practice (ITP) ever since its founding in 1992, and has become one of the most useful and popular practices in many ITP groups. (See Chapter Eleven, "The Body as Teacher," in <u>The Life We Are Given</u>, by Leonard and Murphy.)

One of life's truly incomparable gifts

To get started realizing more of your emotional potential, acknowledge any negative feelings in your body. Move even more deeply into them. What in your life did they come from? What are they saying to you now? Could you do without them? What would life be like if you did? Then two more questions: “What, if anything, am I getting out of holding onto such negative feelings? Is there a better way?”

Concentrate on relaxing your body, especially those parts of it — shoulders, abdomen, throat, forehead, whatever— that have become tight and painful from expressing negative feelings. Don’t hurry. Don't go for lasting change in a few minutes. Limbic messages are generally slow in changing. [A warning here: A long-persisting or constantly recurrent pain might signal some purely physiological problem. In case of doubt, see your physician.]

Again taking your time, explore your entire body carefully and thoroughly for positive feelings. Ally yourself with any such feeling. Cultivate it. Celebrate it. Consider all the possibilities it might open in your life. Are you willing, deep down, to accept and enjoy it? Are you willing to accept all such gifts graciously?

Again, be patient. At the same time, however, bear in mind that to realize more of your emotional potential, to feel the thrilling flow, the tingling of positive feeling coursing through your body, constitutes one of life’s truly incomparable gifts.