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**THE INTELLIGENCE OF MOVING BODIES:
A Somatic View of Life and Its Consequences**

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A PERSONAL PREFACE

As I sit at my desktop computer, I am aware of my fingers moving the keys, my breathing, the screen in front of me and the keyboard as I move my head to see it. The words come into my consciousness as I convert my intent into sentences, what I want to describe, and what I am aware of in my personal environment and in the space of my outside environment. I notice the movement of my breathing, which is smooth and shallow, without effort, the feeling of life in my legs, my trunk, my arms, my feet, my head, as well the pressure of my weight on the chair seat. And at the periphery I am aware of the nature outside the window, the growing chestnut tree and its blossoms, the breeze through the other bushes and trees, a bit of blue sky and a line of cloudiness. It is all very ordinary and yet special. I am about to write that it was not always like so in my life, and I notice that I wiggle my left knee from side to side. The thought reflects in a slight uneasiness that couples with my unconscious moving of my leg. In the complexity of each present moment there are layers of awareness.

It was not always so. I think back on the beginnings of my present life, back to my professorship in inorganic chemistry at a small college connected to a larger university in the 1960s. Then my present moments were not so full. I am sure that the feeling and sensation of life in myself was far back in my awareness; habitual movements were not noticed; my environment was not experienced as present, but as a place of discomfort. I remember often a perception of not belonging to where I was, that I was a foreigner on earth. The time teaching was tedious, that is I experienced tiredness, a heaviness, and waited anxiously for the bell so that I could stop and go back to my desk. And I suffered from ailments, including repeated episodes of severe back pain, and a chronic bowel irritation. Moving itself was experienced at times as a chore. I was best off with my nose in a book.

In those days I read avidly about psychology, alienation, politics, existentialism, and related topics. I had read Freud, Norman O. Brown, Paul Goodman, Norman Mailer, Camus, Sartre, Martin Buber, and Wilhelm Reich. I subscribed to *Commentary* and *Encounter*. These interests were extracurricular. I also read in the field of the philosophy of science and considered myself thoroughly rational. I believed in an objective truth that could be revealed best by experimental methods. I was sure that I was normal. And yet what was understood then in scientific psychology seemed to have only a weak relationship to the experience of being alive. Limited as I was, I suspected there was much that I had not experienced and not understood. My readings did not make my life smarter or better. The path of life seemed to continue without choice.

Until pain became prominent, most of my conscious experience was involved in verbal thinking, or escaping into doodling. My life with friends was full of talk. With my wife at that time, there were many moments of struggle and anger. I rationalized that she imagined the slights and faults that brought us to conflict. It took a weekend with an encounter group to reveal myself to myself. It was a shock to realize that I was hiding myself from myself, and those around me. How did I do this? What was gained and what was lost? How did it distort my concepts, and perceptions?

My intent in bringing up these personal details is to reveal a condition that while personal to my own life at that time is actually an induced condition that affects many people in modern culture. While I projected a mask of calm (even to myself), I was very disconnected from feelings and emotions that were present in the fringe of my experience, but inhibited from expression. I did not fully experience the life in myself. I remember in the first experience of an encounter group feeling a kind of superiority in my calm as I watched others in the group becoming emotional at various points. During the second weekend I exploded in unsuspected rage. After the initial shock, I had a sense of relief and openness in breathing, a feeling of letting go. Wilhelm Reich started to make sense. He had postulated that what is hidden and resisted is embodied in the state of the musculature and body. Reich as a member of Freud's inner circle was eventually ejected from the group of psychoanalysis. Later he was considered a paranoid and unbalanced. Yet many of his insights and intuitions are no longer considered radical.

By the mid 1970s, I had abandoned my career as a professor and was in a training group in San Francisco with Moshe Feldenkrais, D.Sc. The doctorate in science was obtained for work done in the laboratory of Frederick Joliot-Curie in Paris in the nineteen thirties and awarded just after WWII. Yet what Moshe Feldenkrais was presenting to us seemed far a field from physics and engineering. The theme was movement, but not from the external perspective. It was not dance, not performance, not aesthetics, not an external analysis of how we moved, but an exploration of our own kinesthetic experience developing all the richness possible from that.

The year before I had the opportunity to experience his movement lessons with a teacher who had studied with Feldenkrais briefly in workshops. At this point I was acutely aware that the way in which I inhibited feeling was by controlling those movements of myself necessary to the expression of those feelings. This was not necessarily conscious on my part. However, having awareness of what I did and how I did it as revealed in the Feldenkrais lessons were important steps in resolving a number of life difficulties. The experience of a sense of freedom in moving, dancing, acting, opened further the possibility of an embodied life. The perception of not belonging, not connecting, lifted. I could now go to the floor and with the movement sequence processes I learned to relieve the pain producing tensions in the musculature. It took many years to better connect with life, nature, and other people. The journey I took in the late sixties, and throughout the seventies put me on a path unimaginable before I began. While I was guided by a number of other persons such as body psychotherapist, Ron Kurtz, and gestalt therapist Jack Canfield, the work from 1975 to 1978 with Moshe Feldenkrais was instrumental to revising entirely my worldview and my process of thinking. What was personally practical now became what I would share with others the rest of my life. I became a practitioner and then trainer of the Feldenkrais Method. I abandoned completely my academic career, and work as a chemist.

There was another side to spending four summers with Feldenkrais. While my explorations into feeling and moving had resulted in a turning away from intellect, Feldenkrais was a thinker of the first order. He invited Stanford neuroscientist Karl Pribram to participate in three dialogs for our training group. Later we had visits from cybernetician, Heinz von Foerster, and anthropologist Margaret Mead. We were encouraged to read widely in all areas relevant to the work we were doing experientially. And from the first session onward Feldenkrais spaced the experiential lessons with lectures and stories to convey the strong intellectual underpinning to his movement work. He opened up consideration of movement, not as some subsidiary system of a person or organism, but as the most essential aspect of being alive. What we were doing in exploring movement would affect everything else in ourselves. Nothing in the process of living was conceivable without movement. While at first skeptical of the idea that changing patterns of moving would also change patterns of conceptualization and cognition for example, it was clear after four years in training that this was a consequence for myself. What Feldenkrais presented intellectually cohered with everything we did on the experiential level. He encouraged us to learn as he did and not take anything for granted. We were immersed in a method of inquiry and self-generated discovery. Two aspects of his views on what we were doing were particularly attractive to me. First that thinking involved sensing, feeling and acting. Intellectual, verbal thinking without grounding in the senses and experiential realm was sterile. Second each person had the ability to find out for him/herself and needed to do so. Error often resulted in applying a predigested external idea of what was correct.

As human beings we tend to be hungry for the correct view, and the right answers. Feldenkrais' program was, despite my attraction to a search for autonomy and self-directed improvement, a challenge. I often wanted the correct answer to the puzzles that he presented. I knew on the other hand that human problems were often obscure, that is, direct cause-and-effect thinking did not lead to solutions or that such thinking was only partially valid and limited. We had to think outside the box of our learned cognitive structures. I began to separate from the idea that movement was an add-on, that a person had a motor apparatus that was responsible for my sensory motor skills. As I became adept with the method, my enhanced abilities brought me to a thinking that was powerful in its application, and at the same time convinced me that there was a strong middle path between working from educated pre-existing beliefs and the anarchism of anything goes. Living systems are highly complex and ultimately unpredictable in a strict sense. At the same time they are reasonably lawful in how they act and interact. Learning takes place in an environment in which action and interaction are the means whereby the nervous system and body develop in relation to the needs for sustenance, reproduction, and protection. Life survives out of the activities that sustain it. Life is ongoing even if individual organisms are born, develop, and die. Yet each organism 'knows' how to survive as long as is possible. Movement and intelligence are key threads of this ongoing process. Somehow in our western culture we have tended to lose a living connection to these threads. Thinkers and scientists are only recently rediscovering movement and embodiment. Intelligence is only recently being rediscovered as a feature of all living things, including the most simple. Feldenkrais was in the forefront of this thinking and without the exposure to his methodology this book would not be possible.

AN INTRODUCTION TO THE BOOK

The Importance of Movement as a Biological Dimension

As Human observers, many things in the universe are seen by us to move. But only living things are seen to move themselves. Moshe Feldenkrais said, "Movement is the key to life." What could he have meant by this statement? A life form that sustains itself, and moves itself must be sensitive to its surroundings, therefore the intelligence of (self) moving bodies. Everything alive is in movement and has at least some movement autonomy in relation to a wider environment. Science writer and anthropologist Jeremy Narby (2005) in his recent book, *Intelligence in Nature*, documents the scientific evidence and experiential evidence that intelligence exists at every level of life from the bacterium to the highest levels of evolution. By intelligence he means, as he hones this concept, adaptability and variability in response to the conditions of an environment in which life can be maintained. To achieve this, self-movement is essential.

Hard science as a modality of learning, thinking and exploring is constrained by established habits and norms of investigation. We more often think of this methodology as leading to the freedom of thought that established our modern world and do not notice its limitations. More politely you could say the activity we call science has developed certain rigorous procedures in order to establish what is so in our world. We want to know that our conceptions have validity. While the successes of physics, chemistry and the application of these conceptual realms to the engineering of our environment can be much admired, the application of its methodologies to living beings creates unexpected problems. The methodologies of hard science fixate the attention on isolating mechanisms, finding causes and effects, narrowing attention to limited

areas, and constraining thinking to an artificial realm we call, objectivity. This is not to say that the reductionist and objectivist program cannot yield knowledge of the living world. Many important discoveries about our selves and other living beings have followed. We now know many details about the biological mechanisms of genetics, cellular activity, nerve transmission, and how learning takes place in terms of structural changes in nerve cells. And we have established that many of these details are common to organisms at vastly different levels of complexity. The complexity itself on the other hand has not yielded easily to reductive models. The point is that the integrative, and relational, aspects of living systems require more than simply adding the pieces together. We need a biology of coherence to improve our understanding. Yet we imagine that staying on the current popular pathway of trying to engineer our life's problems will lead to a far better life. We think we know much more about ourselves than our ancestors. On the other hand we continually produce new disasters and cover up for our lack of understanding. I remind myself of the statements of Albert Einstein,

Insanity is doing the same old thing the same old way while expecting different results.

and Moshe Feldenkrais:

You see, so it's difficult for the first time too to have a thought, which is contrary to what everybody believes.

To do the work of the Feldenkrais Method required that I put aside many habits of thinking and doing ingrained by my long apprenticeship in school. I evolved a very different perspective about life as a result and discovered the necessity of thinking simply sensing, feeling and acting without the mediation of language. You might describe this as thinking directly in movement. Strict adherence to the objective stance simply interfered with successful exploration of the human situations I was faced with, both with myself, and those who sought my help. Often solutions appeared indirectly and without figuring out what to do. This shift in thinking and the return to experience has practical consequences. In afterthought I could return to language, which is necessary for conceptual communicating. The essence of Feldenkrais' work was to take abstract concepts into concreteness. Every thing in his work could be shown through demonstration.

Feldenkrais' work, while unique in its particular way of using movement exploration to expanding awareness and self-growth, was also part of a growing trend in modern thinking. Not all scientific approaches stayed within the realm of strict objectivism. What is of value should be observable to others and therefore discoverable. Feldenkrais had contact with a number of seminal thinkers and scientists who were pioneering new ways of thinking in biology, psychology and neuroscience. Among them were Aaharon Katchalsky (Katsir), who helped begin the development of dynamic systems theory, Karl Pribram, who at the time developed a hologram model of brain functions and some of the founders and elaborators of the cybernetics movement, Gregory Bateson, Margaret Mead, Heinz von Foerster, and Francisco Varela. They all appreciated something in Feldenkrais' work that echoed their own new approaches. What we all found in watching him work was that people with many varied difficulties could find a way with his contact with them to improve in functioning even when all previous interventions had

failed. It looked miraculous. Nevertheless he was simply using his extraordinary sensitivity and understanding of human complexity to guide people to self-correction. In doing so he trusted that a living person had this capacity as a consequence of the fundamental ability to learn. Many thinkers today now call this self-organization.

Human movement and the embodied life already had a practical tradition behind it in the oriental healing practices and martial arts, and in a growing development of somatic awareness practices based on the work of Elsa Gindler, Heinrich Jacoby, Ida Rolf and F.M. Alexander. Somatic awareness practices involve self-observation and self-awareness processes in moving and acting. Feldenkrais had interacted with the work of each of these teachers. In 1975, however, in most fields of thinking and study of the human being, movement was either ignored or relegated to a separate field of study such as motor learning and behavior. In the past century what now is labeled, embodiment was taken seriously primarily by phenomenology, especially in the work of Edmund Husserl and Maurice Merleau-Ponty, and in the psychoanalytically related work of Wilhelm Reich and Paul Schilder. One notable exception in science was the pioneering work of Russian physiologist and psychologist, Nicholai Bernstein. We will meet him in later parts of the book.

Today the situation is changing radically. Neuroscientists are now speculating that without dynamic connections to a living body and environment, the nervous system cannot function. Professor of Neuroscience at Rutgers University Georgy Buszaki writes in his recent book *Rhythms of the Brain* (2006, p. 221), “However, without the output interacting with body and environment, no amount of sensory stimulation can produce a useful brain.” And Professor of Neurophysiology Giacomo Rizzolatti at the University of Parma and Associate Professor of Philosophy of Science Corrado Sinigaglia at the University of Milan write in *Mirrors in the Brain* (2008, p. xi), “The rigid divide between perceptive, motor, and cognitive processes is to a great extent artificial; not only does perception appear to be imbedded in the dynamics of action, becoming more composite than used to be thought in the past, but the *acting brain* is also and above all a *brain that understands*.”

The above comments are prompted by many new discoveries about the nervous system. But the whole question of body – mind has been reassessed in recent years from scientists and philosophers. The seminal book, which helped promote the idea of an embodied cognitive science, *The Embodied Mind: Cognitive Mind and Human Experience* (1991) by biologist and neuroscientist Francisco Varela, philosopher Evan Thompson, and psychologist, Eleanor Rosch moved the discussion forward in a very positive way. They describe their book as an “exploration of deep circularity” (p. 12). Philosophers such as Shaun Gallagher with his book *How the Body Shapes the Mind* (2005), Alva Noe with *Action in Perception* (2004), and Evan Thompson with *Mind in Life: Biology, Phenomenology and the Sciences of Mind* (2007) have continued the discussion within the philosophy of mind. There is nevertheless deep resistance among many scientists and thinkers who wish to preserve a scientific quest for objective knowledge, as we have understood it. There is a belief that science depends on objectivism and must precede with a series of slow steps. Many scientists operate in their fields of inquiry as if each aspect of their study is a separate and independent entity with the idea that the accumulation of bits will create a storehouse of knowledge. Nonetheless there were many predecessors who suspected this approach was not enough. That we had to consider that we are embodied beings

where the fact of embodiment challenges objectivism. I mention only a few of the other scientists and thinkers who had considered that embodiment and or movement are important for a more complete understanding of life in all its aspects and we ourselves are essential. There is no view from nowhere. I include psychologist J.J. Gibson and his associates, E. J. Gibson, Edward Reed and Michael Turvey, biologist Humberto Maturana, cognitive scientists George Lakoff, and Mark Johnson, movement scientists Marc Jeannerod, and J.A. Scott Kelso, developmental psychologist Esther Thelen, philosopher and psychotherapist Eugene Gendlin, and psychiatrist Daniel Stern. Finally I would include in this list from the more distant past, Charles Darwin, Henri Poincare, and William James and John Dewey.

Two recent books with movement as a central or major theme bring awareness to the very essential place of movement itself: *The Brain's Sense of Movement*, 2000 by neuro-physiologist Alain Berthoz, and *The Primacy of Movement*, 1999 by philosopher, biologist and dancer Maxine Sheets-Johnstone. They are important sources for further study of the issues brought forth in this book and for much more detail of the scientific basis and intellectual discourse in relation to the themes of this book. If movement is so essential, we have to consider it as integral to living beings and not just a separate aspect of life that can be studied independently.

Thus the theme of this book is movement in relation to everything else. There are many questions: How did we get to adulthood where we live with other human beings, interact with them, talk, make love, fight, and carry on with many activities? It is impossible to think that we can live without the matrix of other humans and the other life forms around us. How do we develop our capacities in relation to this matrix? We learn in intimate contact with caretakers whether they are our parents or not. We learn also in an environment, which includes the resources necessary for life. The environment also includes gravity, which makes a very special demand on growth and development. Development is a serious business in life for animate, interacting beings. Thus we will ultimately have to account for many levels of interaction from the molecular to the social and then to the ecological.

As I am no longer an active scientist, what I have to contribute comes much more out of my twenty-seven years of active practice and experience with the Feldenkrais Method. Much of this work is unique as will become apparent as the book proceeds. Thus this book will emphasize as much as possible in book format, personal experience. It is to my mind a very good route to wisdom if used carefully and with training. Wisdom is not the same as technical and scientific knowledge, which require the practice of specific methods of investigation differing from what I am proposing. But personal experience also requires a disciplined mode of investigation in order to arrive at a useful perspective. With this we can begin to sweep out the cobwebs of conceptualization that confuse our sensing, feeling, acting, and thus our thinking. It is not a question of opposing knowledge developed in other ways. In fact it is essential not to do this. But a disciplined personal exploration can help clarify the conceptual confusions that arise from an attachment to third person accounts of our-selves, as well as how we understand our first person experience. I hope thereby to engage you, the reader, on a journey, to move you away from your over-educated knowing and into the realm of finding out for yourself to whatever degree is possible; but finding what, or better yet finding how? This is our question. We can then ask how we perceive, and how it is different from sensing, how conceiving takes perceiving to the level of thinking, how movement leads to perceiving and conceiving, and how perceiving ourselves

accurately can lead to a better life and a better thinking for ourselves. Movement also takes us to another realm of living related to perceiving and thinking. And that is the realm of affect. Affect is more than what we can label emotion. Without affect intelligence has no way to operate. The context of the investigation will be the matrix of interaction where we live and in which we developed.

The book is divided in three parts. In Part I, From Origin to Perception, we will explore the ground of a new thinking about life and its origins. We begin with the insight that in biological life the first living thing enclosed itself in a membrane and that within that boundary there was a structure and function that ensured self-propulsion. Nothing lives or survives without the separation and some form of sentience. We expand from this point to investigating intention, action, perception, and how this leads to concepts such as space and time.

In Part II the question of learning and development is brought to the foreground, as well as the vast topic of affect and emotion. We will follow with an emphasis of finding how movement is necessary for affect and how affect is necessary for thinking, learning and developing. We will touch on the question of language and the relation of affect to music and other art forms. We will explore how movement and embodiment are essential to the development of thinking, which begins without words but becomes languaging in relation to living in an environment of speaking persons.

Part III will bring us to the practical aspects of this new thinking about life. We will through examples show it is possible to resolve particular problems within ourselves and discover that through thinking in movement we can find a way to free ourselves from habitual impasses. Specific movement explorations will be given so that the reader can experience directly the learning process. Hopefully then each person can find a path for acting more constructively in life and with greater pleasure and connectedness. And lastly we will sum up how the developing understanding of this new view of life leads to reconsidering many questions about learning, being, and acting in modern life.

PART I

From Origin to Perception

Chapter 1. INTRODUCTION: Life's Contingencies Bring Questions

A man who was blind from early childhood had his vision restored in adulthood. He could see but he couldn't 'see.' Was he looking at the cat or the dog? He had no intuition. Only a careful noticing of how the hair was or how the ears were directed, and a matching to his verbal memory of which features constituted the dog, and which the cat. Only this slow cognitive process allowed him to distinguish the creature he was looking at. On the other hand simply touching and stroking revealed immediately which animal was present. It is hard to imagine his difficulty. We take our own visual perceiving so much for granted we tend to think all we need are eyes to see.

Walking down stairs was a misery because upon seeing his foot he didn't know where to place it. When he was blind he had no difficulty. He placed his foot exactly where he had stability and continued down the stairs without concern. Tragically, he never did learn to move his eyes together and perceive as most people do. His problem was resolved when he eventually became blind again. Having never learned to perceive meant that he couldn't 'see' even with normal eyes and having a normal image on the retina. He also could not coordinate his seeing and his moving. These learnings are normally accomplished in childhood without difficulty. When this does not take place learning can happen only with great difficulty and effort.

Another man suffered a terrible misfortune in losing his proprioception, that is, his perception of his body-space, muscular activity, orientation of his limbs, etc. No one could help him and he was unable to move himself. He lost his ability to be an agent for his own movement except for moving his head and neck. None of the professional people he consulted could help him. In fact most of us reading this have a hard time understanding his experience. We have our proprioception more or less intact and do not tend to notice it. How is it he cannot move himself? He was desperate to recover his agency of himself.

Out of this predicament he discovered that he could use his visual perception of his limbs and trunk to guide (with considerable effort and difficulty) his moving himself. He became extraordinarily skillful in leading a semblance of a normal life, which was a goal he set for himself. He wanted to be like the person he was before his illness and retain his sense of his personhood. His success baffled his doctors. Nevertheless once he had established a path for himself in learning, he did find professional helpers who could guide him.

These are exemplary stories to reveal how complex our skills are in living our daily life. The difficulties of these two persons reveal that there is much we take for granted about ourselves. We often fail to appreciate how our so-called mental abilities relate to what is so essential to being alive, that is we are moving beings and autonomous or self-moving beings. We take for granted also how we learned our skills, how we learned to stand up, to walk up and down stairs, how we learned to pick up objects, how we learned to recognize and identify cats and dogs, and how we learned to speak about all this. We live each of us in the midst of our own accomplishments and in the context of our embedded-ness in a complex social world. The question is, can we gain awareness of what we do and how we do it, and how we can learn and learn to learn? That will be one aspect of this book.

In the first story a learning process was not discovered by Vernon, the man who lost and regained the use of his eyes. Indeed Oliver Sacks, (To See and Not See in *An Anthropologist on Mars*, 1995), who tells the story, speculates that Vernon's later loss of vision after regaining it was a fortuitous event because it ended the sensory confusion that resulted from the new ability to have visual sensation. In the second story Ian Waterman the man who lost his proprioception engaged himself in his own unique learning process. Medical science was unable to be of any help to him, as was any therapy that he tried. In his intention to recover some sort of agency and control of his movement and personhood for himself, he could only rely on his own personal discoveries. It is a life attitude much to be admired. We would not know about it were it not for the curiosity of neurologist, Jonathon Cole, who investigated Ian's situation in great depth and wrote the account that we have of it, (Cole, *Pride and a Daily Marathon*, 1995).

The questions raised by these two stories are indeed profound. The question of mind and body is still a quandary for those who wish to pursue understanding, as is that of the origin of consciousness itself and its relation to its material substrata, the brain and physical body. Oliver Sacks speculates that Vernon, the man who regained his vision was missing the experience of moving his eyes in order to fix his attention, track movement in his environment, and correlate the two eyes to a common point of focus. Could working with movement have resulted in his gaining perceptual ability? How is moving the eyes and body related to the act of visual perceiving, or perceiving with any other sensory modality? We can only speculate about Vernon's predicament. But we can explore the more general questions. In the story of Ian Waterman as told by Jonathan Cole, what is clear is that for Ian a kind of effort of will allowed him to make a sensory substitution. He used his vision to replace proprioception. In a way this is the opposite situation of Vernon, whose newly acquired vision interfered with his acute proprioception. How was all this possible? And for Ian Waterman what did his sense of himself have to do with his intentionality in seeking the learning that he accomplished?

In the last forty or fifty years whole new field of studies have opened up that are beginning to look at something beyond just the behavior of human beings and animals. It includes a field now known as cognitive science in which the cognitive thinking abilities of humans have been studied at many different levels. More recently consciousness has become a valid topic for scholarly and scientific investigation. It is even the case that such topics as embodiment, movement, and phenomenal experience have become respectable. I tell two more stories to bring some of the difficulties to light.

A philosopher writes a book in which he wishes to correlate many findings from neuro-scientific research and philosophical based positions about consciousness into a coherent model of how consciousness and phenomenal experience can emerge out of the interaction of living systems with the natural world. It is a very good book and provides a detailed analysis of his models. He begins his book with the following statements:

“The main thesis is that no such things as selves exist in the world. Nobody ever *was* or *had* a self. All that ever existed were conscious self-models that could not be recognized as models.”

The philosopher gets up each morning, washes himself, brushes his teeth, decides what shirt and pants he wants to wear, dresses himself, eats a quick breakfast before driving to his university to present himself in front of the gathered students. He wants to understand how he does that. He continues the idea he began as follows:

“The phenomenal self is not a thing, but a process--and the subjective experience of *being someone* emerges if a conscious information processing system operates under a transparent self-model.”

The philosopher obviously has his priorities as to what he wishes to label as existing and what not. But how is this “conscious information processing system” imbued with any more existence or reality than what he calls self? Both words involve a concept about something. In a way it is similar to how we make the concept that we label self. How do we make concepts and how do they imply or not imply existence? Both concepts involve process and not fixity. Self is a biologically related processing, and information processing is a mechanical process related to humanly created machines. Do they really relate to each other? The answer is not clear because we don't yet fully understand biological entities.

A Nobel Prize winning scientist writes in a book about consciousness and the brain, reporting on important research in neuroscience the following statement: “You're nothing but a pack of neurons.” Are we to be astonished by his wisdom or his confusion? Or perhaps both, because what we say, we say in a domain of communication that does not give us a privileged position to know God-like what is absolute. What does it mean to say that you and I are (have being as) only a pack of neurons? In one sense it means that the author wants us to take this as a metaphor for the metaphysical stance he wants us to accept, i.e., there exists only a material reality. In another sense the author is asking us to shed what he takes to be our collective illusions. He makes an identity: Person (self) = pack of neurons. There is no other identity possible since he uses the words “nothing but.” Of course he knows that we make all kinds of other identities. He chooses this one to shock his audience. But he makes a biological confusion. What are a pack of neurons outside of a living, moving body? We need somehow to know what it means when we say to be, or to exist, and what exists if we only are a pack of neurons. Later in the book the scientist takes back his all or nothing stance.

Perhaps the dictionary can help solve our problem. Taking a clue from Heinz von Foerster, I went to a shorter *Oxford Dictionary* and found the word exist means “to be; have being; be real.” I now knew where to look for elucidation of the word, exist. So I went to these other words in the

dictionary and found that the word 'be' means to "exist; occur; live." I then found that 'being' is defined as "existence," and that 'real' is defined as "existing in fact." I now had to find out about 'fact', which is defined as "known to be true," and 'true', which is defined as "in agreement with fact." For the word 'live' I found the definition, "having existence," and at this point realized I had entered a closed loop with no way out. The dictionary has put me through a circle of word relationships without ever elucidating anything about what the words mean. Yet I – we - use these words constantly and know exactly how to use them for the purposes of expression.

Language when you investigate in this way is a closed circle. It is self-referencing and self enclosed, especially in the words establishing a ground for connection and relationship. Philosophers have spent thousands of years trying to sort it out. Perhaps if we look for the roots of words, the metaphorical origins, we can find a way out. What we call 'meaning' is first grounded in concrete action and experience, then brought to abstraction. Normally we forget the pathway. With most concepts we can trace back through previous incarnations of the word.

'Exist', for example, means in Latin to stand forward or to stand forth. Similarly in German you can say 'existense', but also 'bestehen', which also literally means to stand forth or stand out. Stand forth how? In German the word for perceiving is wahrnehmen. Literally 'take for truth'. Let us speculate. When we see an object or a person, for example, the perception stands out in our conscious space from a background. Something thus stands forth in the space of consciousness, as it is perceived as something, an object, another being, an idea, my own being, etc. Thus the root of the word exist comes out of the experience of perceiving. It originally did not have a metaphysical weight of implying 'Reality'. The capital R implies a metaphysical stance, i.e. there is a Reality that can be determined as an absolute. In daily waking life, nevertheless, we use our percepts to negotiate the world we live in and in effect take our perceptions for reality. Sometimes we inflate this sense of reality to the metaphysical level.

In this sense a 'self' as a percept stands forth in phenomenal space and thus exists. It is as much a useable percept as any other. Again there is no metaphysical existence for a self outside of the act of perceiving, and acting. If we investigate further into this idea of standing forth or standing out, we can see that we agree between each other that something exists if that perception stands forth for both of us. I exist for myself, but when you are with me I exist as a percept for you just as you exist as a percept for me. As another example, when you say, "Look at that cat sitting in the widow sill," and I carry out the act of looking and say, "oh yes there he is," we are orienting with each other. We learn to do that and agree through speech and attaching labels to the perceptions. The mother says to the child, "Look there, see the kitty in the widow." And the child looks and smiles back at the mother. These are multiple acts of orientation and labeling. Language is being learned here through the child following the mother and communicating back (non-verbally) that seeing and perceiving has happened. You see, movement and coordinated action are essential to cognitive learning in this way. As Wittgenstein wrote, "Language is a form of life."

It is only when you get to the further reaches of abstraction that you begin to lose the connection of what you say to what stands forth for you. Unless you work in a laboratory or in medicine, neurons exist as a cognitive idea, but do not stand forth directly in your experience. You only know them as representational pictures. You do not experience them. Nor do you feel

them working in yourself. That is why the philosopher Thomas Metzinger calls what he thinks of as the operations behind the scenes of your experience, transparent. Information processing systems are at a still further extension of abstraction. How do we know what that is except as a metaphor derived from a machine that purportedly carries out such an operation? How would anyone know that such a system exists at a biological level in living systems? Scientists still argue about such conceptual propositions. How then can neurons or information processing systems have any metaphysical priority outside of the systems of observation and the human observers (perceivers) who create such concepts? What difference would it make in your life, if you knew that you were only a pack of neurons or not? Is there an objective world out there existent without an observer? These could be un-decidable questions. There are many such un-decidable questions when trying to make metaphysical statements as some thinkers today try to show us. In any event what we say is real is surely observer dependent.

What I propose in Part I is this: that the reader and I become observers. I have structured the process based on my own insights and experiences. Nevertheless, we will explore questions not with the idea that we will arrive at an ultimate truth, but that in the act of exploring we can begin to untie the confusions and knots in our thinking, perceiving and conceptualizing about ourselves. The underlying theme will be movement and moving, as a vehicle for exploration and as a ground for understanding its importance to everything else. There are so many books today on the various ideas about consciousness, cognition, the relations of these aspects of life to the nervous system, etc., that I will not burden the reader with another review of all the ideas and theories available. I also will at times point out where taking the point of view of the moving being may lead to a fresh way of understanding. Above all I hope to provide a concrete experiential way to carry out the explorations and convince through example. Scientifically based research often can lead to important discoveries. These may or may not correlate what we can find out in our exploration process. What is important is to keep a dialog open between differing forms of investigation. Ultimately we should be able to correlate between these realms. I will, of course, cite a number of thinkers and scientists whose insights I find intriguing. Thus we will explore from a very particular but dynamic stance without the usual critical exposition of opposing views.