

Acts of Imagination

The experience of our own body [is] the central reference point of all forms of consciousness.

John Searle

This Cartesian-Newtonian world order was not a matter of the facts of the matter but of fictions becoming embedded and automatized as if they were facts of the matter.

Floyd Merrell

Advancing technology enables us to see links between electrochemical brain and muscle function and our perceptual and behavioral capacity. But there is no agreement on how subjective feeling influences these supposedly objective functions. (Searle, 1995:60) Semiotics, the representational method of Charles Sanders Peirce (1839-1914), articulates the inseparability of subjective experience and objective reality and guides us in assessing the role of *AT* education in the integration of consciousness.

No scientist has more significance for an *AT* language than Peirce, “one of the greatest philosophers of all time” (Popper)¹ and, like Alexander, an orator and actor.² Peirce understands life as a fusion of physical and psychical.

Peirce’s Categories of Experience

Peirce distinguishes three categories of experience—*firstness*, *secondness* and *thirdness*—three ways of “knowing” to account for being and becoming. *Firstness*, *secondness* and *thirdness* are abstractions of experience, as “sweetness” is an abstraction of a “sweet” taste. They provide a way to articulate *AT* process and diagram the interactions of feeling, action and thought. *Firstness*, *secondness* and *thirdness* are “real” and “distinct” from one another. They are also inseparable and cannot be experienced in isolation from one another.

Firstness is a flash, a whiff. It precedes sensation. It has no object, no ideas, no words. It is “the germinal nothing in which the universe is...foreshadowed...boundless, undefined possibility.” (Peirce) A first is an **icon** with only a potential for implication—an origin.



Charles S. Peirce as a young man (about 20 years old).

From the Charles S. Peirce Collection in the Houghton Library, Harvard University

Figure 3-1

Secondness is response—a reaction. A sensation implies an outside object and an inside subject. There is light and an eye to see it. A second is transaction, an **index** in which one something affects another—a connection.

Thirdness is interpretation, inference. It is the comparison of inside and out, the distinguishing of the light that flashes from the eye that sees. A third is our understanding of what we feel, our working hypothesis about the future, our **symbol** of reality—an association.

Firstness is possibility, origin. It beds in our *under* system, the viscera that sustain existence. Firstness is our moment to moment undifferentiated, gut level experience of stimuli. It is the substrate shared by secondness and thirdness and *right, back* and *left*.

Secondness is the dual reality of self and other—of outside (light, dark, cold, heat, hard, soft) and inside (emotion, movement, thought). Secondness is our *back*, cerebellar body response to stimuli.

Thirdness is association, our *right* intuitive perceptions and our *left* analytic interpretations of *under* viscera and *back* body response. Thirdness determines the content and quality of sensory information about the outside world. Thirdness determines the content and quality of kinesthetic information about our bodily activity. It determines how much or how little we know of our experience, what we emphasize and what we de-emphasize. In these judgments, thirdness shapes future sensation, future secondness.

Peirce in AT Teaching

Peirce's philosophy articulates the principles underlying *AT* learning and the communication between *AT* pupil and teacher.

- (a) The how (means) of understanding (*right* intuition, *back* experience and *left* thinking) and the what (ends) for which the means are undertaken (*left* goals reflecting *right* emotions and *back* needs) are inseparable.
- (b) Action is not the result of what we understand, but of how we understand.
- (c) There is no escape from sensory fallibility.
- (d) Unifying discoveries emerge in imagination from the play of individual acts.
- (e) Habit is the regulation of ongoing experience into pragmatic continuity.
- (f) Habit can only be altered by indirections, which allow spontaneous transformation and adaptation.
- (g) The interplay of precision and vagueness is inevitable and fruitful.

Inquiry, the Means of Understanding

All things that are,

Are with more spirit chased than enjoyed.

Shakespeare, *The Merchant of Venice*

“Experience alone teaches anything.” (Peirce, 1877, *EP*:110) But experience “open to verification and reexamination” teaches everything. (ibid) The first step of inquiring “consists in examining a mass of

facts and in *allowing* these facts to suggest a theory,” a pattern that connects individual elements into a whole. (Peirce, *SS:53*) Allowing the creative play necessary to imagine an hypothesis (Peirce’s abductive reasoning), is diametric to the controlled action necessary to test the hypothesis (inductive reasoning) and to the conceptual discipline necessary to construct its implications (deductive reasoning). Experience overflows with potential data. But only *right* resonation springs new hypotheses. For *right* to imagine, we must allow *back* to move beyond *left* habit. Abductive reasoning involves

a certain agreeable occupation of mind which...involves no purpose save that of casting aside all serious purpose...It is [*right*] Pure Play. Now, Play...is a lively exercise of one’s [*back*] powers. Pure Play has no rules, except this very law of liberty. It bloweth where it listeth. It has no [*left*] purpose, unless [*right*] recreation...It begins passively enough with [an undisciplined, indirect] drinking in the impression of some nook...But impression soon passes into attentive observation, observation into musing, musing into a lively give-and-take...between [*right*] self [and *back* self] and [*left*] self. If one’s observations and reflections are allowed to specialize...[*right*] play will be converted into [*left*] scientific study. (Peirce, *SS:120*)³

The essence of Peirce’s principle of inquiry is not what is discovered, but how.⁴

Habit

“Habit is [a] specialization of...mind,” a general *left* idea that has the power of exciting *back* reactions. (Peirce, *EP:328*) To function as habit, it must become suggestible by *right* sensations.

The mind acts in [this] way...every time we acquire a power of coordinating reactions...as in performing...[a motor] skill. (Peirce, *EP:328*)

It is a “mistake to conceive of the psychical and the physical aspects of matter as two aspects absolutely distinct...Whatever affects matter according to regular laws is itself matter. [M]ind is directly or indirectly connected with all matter, and acts in a more or less regular way; so...mind more or less partakes of the nature of matter.” (Peirce, *EP:349*) Mind, in the whole, is a *right, back, left* trilogy of stimulus, reaction and association.

As we react repeatedly to a given stimulus with a particular sensation, we become more and more likely to recreate this experience. A stimulus, from outside or inside, provokes a *right* feeling and a *back* reaction. Repeated experience generalizes to a *left* idea, a habit of thought. From then on, *left* thought alone can trigger the *right* feeling and *back* reaction, whether circumstances warrant or not. We become the habit's captive. (Peirce, *EP*:329)

Acquiring a Skill

Peirce describes an exercise of “moving...two hands simultaneously and in opposite directions through two parallel circles nearly in the medial plane of the body.” (*EP*:238)⁵ New motor skills appear difficult when we first attend to the “different actions in different parts of the movement.” But “gentle” forces enable “a certain amount of arbitrary spontaneity...Suddenly a general conception of the action *springs up*.” (*ibid*:328) Sensory patterns experienced in the repeated muscular activity emerge into a concept. The act becomes easy. The *left* idea unites the *right* sensations and *back* actions.

If I wish to acquire the habit of “speaking, writing, thinking,”...instead of “‘speakin’, ‘writin’, ‘thinkin’,” as I suspect I now do (though I am not sure)—[it seems at first that] all I have to do is to [repeat] the desired enunciations...many times...as thoughtlessly as possible, since it is an inattentive habit that I am trying to create. Everybody knows the facility with which habits may thus be acquired, even quite unintentionally. But...nothing like a concept can be acquired by muscular practice alone...It is not the muscular action but the accompanying inward efforts, the acts of imagination, that produce the habit. (Peirce, *PWP*:278)

Thought is feeling, a biological process, but known only indirectly by right awareness of back practice, drawn out by left inference. A thought (a kind of sensation) is known only by interpretation of the body signs (the neural, chemical, motor responses) accompanying it. Sensation (a kind of thought) is inextricable from, but not reducible to, body. (Colapietro, 1989:95)

Acts of imagination may seem less tangible than acts of muscle, but they are not less real.

If a person who has never tried such a thing before undertakes to stand on one foot and to move the other round a horizontal

circle... and at the same time to move the fist of the same side as the moving foot round a horizontal circle in the opposite direction...he will, at first, find he cannot do it...[H]e lacks a unitary concept of the series of efforts that success requires. By practicing the different parts of the movement, while attentively observing the kind of effort requisite in each part, he will, in a few minutes, catch the idea, and will then be able to perform the movements with perfect facility. (Peirce, *PWP*:278-279)

The way to learn a complex act is to focus attention away from the end and onto the means, the series of unified efforts, the separate steps that occur all-at-once, yet one-after-the-other.⁶ It is not practice, nor muscle effort, but attentive observation that develops an act of *right* imagination, that catches the feeling and forms the idea—just as the plowboy’s “highly trained guiding sensations” allow him to use “only the particular muscles best adapted for the control of his equilibrium.” (Alexander, *MSI*:132)⁷

Non-Habitual Reactions—Spontaneity

Habit is set in motion by a stimulus and terminated by the removal of this stimulus. In standing, the stimulus is the wish to stand. The removal of the stimulus is our recognition that we stand.

But when the expected removal of the stimulus fails to occur [because the habit is not consummated along its usual path], the excitation continues and increases, and non-habitual reactions take place. If then we suppose that matter never does obey its ideal laws with absolute precision, but that there are almost insensible fortuitous departures from regularity, these will produce, in general, equally minute effects...[I]t is the characteristic of unstable equilibrium, that near that point excessively minute causes may produce startlingly large effects. Here then, the usual departures from regularity will be followed by others that are very great; and the large fortuitous departures ...will tend still...to break up [further]...the nature of habits. Now, this breaking up of habit and renewed fortuitous spontaneity will...be accompanied by an intensification of feeling. (Peirce, *EP*:348)⁸

Mind is an interpretation of body that affects action. But interpretation is never complete. Interpretation derives from idiosyncratic experience. What we feel to be happening may not be. What we fail to feel

may matter. Because of this sensory fallibility, attempts to change habit are often misdirected. Whatever we accept as true (feel as actual), is only so within a probability of error. (Peirce, *PWP*:54) To undo a habit requires circumventing (by indirection) *left*'s blinding grip, in order to reach *back*'s reactive power and *right*'s sensuous appreciation.



Alexander giving Dewey an *AT* lesson.

Courtesy of the Center for Dewey Studies, Southern Illinois University

Figure 3-2

The appearance of everything—objects, our bodies, our identity, our feelings—are creations of habit. Yet things change. Habits transform. New paradigms emerge. How? “Surprise” is the catalyst. (Peirce, *PWP*:278)

Inhibition

Voluntary inhibition—interrupting a habit by delaying customary response and thus prolonging the stimulus—is the way of surprise, the way beyond habit. “Self control of any kind is purely inhibitory.”

(Peirce, in Colapietro, 1989:115) A direction to “not speak” at the moment of a stimulus to speak allows non-habitual speaking. “The commonplace expression ‘Stop and think!’ is ...pregnant” with new life. (Colapietro, 1989:115) The capacity to stop, to inhibit habitual motion of thought, limb and tongue, releases spontaneity.

The “determination [of anything] is by negation.” (Peirce, 1868, *POS*:74) We only recognize a something as distinct from a something else by comparison of how that something is not like the something else. A thought, an awareness, a feeling comes to attention only by comparison of how it is not the continuous flow of habit.

AT Influence on Pre-Verbal Self Formation

When John Dewey finds in *AT* education “a procedure in actual practice which demonstrates the continuity of mind and body,” he discovers “habits” as the substance of self and character.⁹ *AT* education is a physical realization of Dewey’s theory of habit education.

AT lessons revive *back* system adaptability. Inhibition and attention to means, along with gentle guidance from a teacher’s hands, allow the Pure Play that enable new experience to adventure beyond old habit.¹⁰ By exposing unconscious habituality in common place activities, *AT* lessons free postural and peripheral muscle activity so that innate *back* motor reflex can be re-inhabited and re-invigorated.

Is it not strange that we should know hardly anything of the first three years of life?...Never have I met anyone who remembered his first steps, or the manner in which he learned to talk, to eat, to see or to hear. Yet these are all vital experiences...It is not that we forget those three first years, only the remembrance of them is shut out from our consciousness; in the unconscious it goes on living, and continues to be so active that all we do is feed from this unknown treasure-heap of memory. (Groddeck, 1922:12)

Because cortical development is incomplete before three, early motor learning is pre-verbal. Levin's integration of psychoanalysis and neuroscience identifies the vestibulocerebellar *back* system as the core of motor development.¹¹ A vestibulocerebellar *back* system becomes self evident through kinesthesia, our system of muscle-effort feedback.

As an infant explores his environment, motor feedback establishes a sense of self-in-the-world that enables the infant to distinguish himself

from environment and parents. It is the infant's crying, crawling, standing, walking which construct his vestibulocerebellar *back* self. It is through awareness of muscle exertion that sense of self emerges.

A very young child may always be observed to watch its own body with great attention. There is every reason why this should be so, for from the child's point of view this body is the most important thing in the universe...Only what it touches has any actual and present feeling; only what it faces has any actual color; only what is on its tongue has any actual taste. (Peirce, *EP*:19)

Feeling and Memory are Habits of Action and Posture

Postural coordination is governed by the cerebellum and basal ganglia through their connections with the motor and sensory cortex systems and lower brain structures. The cerebellum communicates with every part of the nervous system. Positioned at the back of the head on top of the brain stem, its two lobes connect 40 million nerve cells in "cross-opposition" to the right and left cortices. (Blakesee, *NYT*:11/8/1994) There are more nerve cells in the cerebellum than cortex and spinal cord combined. In mammals, cortex removal leaves postural coordination intact—but undoes cognition. Cerebellum removal, however, undoes postural coordination, causing tremor, over-response and collapse. "It is clear that [the cerebellum plays] an important role in the regulation and coordination of the postural mechanisms." (Roberts 1978:299)

Back-system, cerebellar processes also administer our emotional and intellectual lives. The continuous triologue between the cerebellum and its two, quite separate, cerebra coordinates *right* and *left* cerebral processing (Levin, 1991:66). When cerebellar input alters, so does central nervous system balance, changing mood and thought. (*ibid*:67)

The vestibular cerebellar system keeps track of body parts and their relation to one another. The rhythmic soothing of good mothering is a cerebellar stimulus. Postural improvement during psychoanalysis is a cerebellar response. Gestural empathy (hand/arm movement and body language) "implies that the cerebellum is involved...[in gaining] access to our feelings and memories, which may well be organized around action patterns, postures, or particular sensory modalities." (Levin, *ibid*:66)

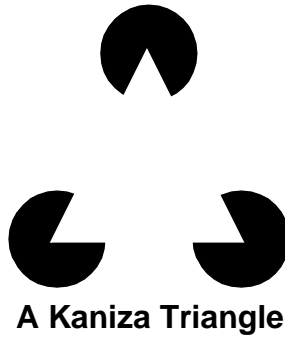


Figure 3-3

The cerebellum orchestrates the limbic system (biologic rhythms, fear, rage, joy, sex), thalamus motor system and “sensory modalities of every kind.” (ibid) Through *right/left* interpretive experience, the cerebellar *back* system is “in touch with both the external and internal milieu.” (ibid) The *back* system participates with and coordinates the intersecting *right* and *left* representations of emotion and mind.

Body Forms Emotion and Mind

Feelings (fear, anger, joy, sorrow) are our experience of change in our body. Feelings include “neural and chemical aspects” of the brain and the way the “whole organ systems operate.” (Damasio, 1994:224) “Some motion takes place in our bodies” for “every feeling” (Peirce, 1868, *POS*:73). The bodily connections to emotional states (gritting teeth, making a fist, tensing neck, increasing heart rate) “are so indefinitely numerous and subtle that the entire organism may be called a sounding board, [against] which every change of consciousness, however slight, may reverberate.” (James, 1890)

James says “we are sad because we cry, happy because we laugh.” But this *back to right* (body to feeling) dialogue overlooks *left* interpretation. Peirce goes beyond James’ duality to establish cognition, a “gentle” *thirdness* of mind as an integral aspect of emotion, and to establish emotion as integral to cognition. “An emotion...comes from...thoughts which ...have motions corresponding to them in the brain [which produce] large movements in the body and...[which in turn] strongly affects the current of thought. The...motions...are...blushing, blenching, staring, smiling, scowling, pouting,

laughing, weeping, sobbing, wriggling, flinching, trembling, being petrified, sighing, sniffing, shrugging, groaning, heartsinking, trepidation, swelling of the heart.” (Peirce, 1868, *POS*:74)

Feeling, movement and cognition are in continuous triologue. It is not only that we laugh in response to a “funny” situation—or that the *back* muscularity of laughing creates an inner *right* “funniness”—or that laughing is the feeling. There is also our continuous interpretation (a *thirdness*) of our experiences. These interpretations produce new feeling/body/thought states that produce new experiences.

Simple, Dual & Plural Consciousness: Alpha (α), Beta (β), Gamma (γ)

Peirce identifies three stages of consciousness—*simple* (immediate perception), *dual* (connecting simple perception with past perception), and *plural* (inferring and hence interpreting a future). (Peirce, 1888, *EP*:282-284) We will refer to them as alpha (α), beta (β) and gamma (γ).

Simple alpha (α) “is a consciousness as it can exist in a single instant...a twinkling of an eye.” (ibid) It is a perception with no discrimination, no context, no analysis. In a laboratory experiment, an alpha (α) consciousness occurs when a Kaniza is flashed for 50ms and the flash is followed immediately by the flash of a different image. The second flash aborts perception of the first. When this happens, the subject sees only three disconnected shapes. (Reynolds, 1981, cited in Crick, 1995:73)¹²

Dual beta (β) consciousness “collects present and [past] into a whole.” (Peirce) It is the response in memory to a simple sensation. It is the internal image conjured when a *simple* alpha (α) consciousness is allowed to percolate. A beta (β) consciousness occurs when the Kaniza is shown for 50 ms—followed by a 75 ms delay before a second image. Now the subject makes a connection among the elements of the Kaniza. In this 75ms interval, an organization of the whole becomes apparent. (Crick, op. cit) Connecting the dots to each other is an automatic beta (β) response. There is no reasoning.¹³

Plural gamma (γ) consciousness is the “active constructive process [in which our] brain makes the best interpretation [of neural events] according to its previous experience.” (ibid:31) Gamma (γ) is recognizing the Kaniza as a triangle. It is an interpretation, not a perception. It comes from associating the image perceived in the beta (β) reaction with what we know about shapes in order to give the image a context for future use. In contrast with beta (β) reaction, gamma (γ) can detach from sensory experience and separate from involvement with an “outside.”¹⁴

The $\alpha\beta\gamma$ of seeing...

Vision is primarily planar. With one eye we see two dimensions—height and width. The third dimension, depth, is elusive, not directly perceptible. It cannot be captured by sweeping the eyes left and right or up and down. The third dimension remains an inference, a habit of integrating the slightly different images provided by our slightly separated eyes. A third dimension is gamma (γ).

We seldom mistake height and width in body navigation. We often mistake depth. We reach too far, too near. We need more steps than anticipated or less. We can feel out height and width from where we stand, with sweeping eye and following hand. But there is no way to experience depth which exceeds our reach. When we move forward from one end of a room to the other, at each step of the way we are no longer where we were a step before. That experience is no longer present, no longer felt. Pinpointing our location has become a secondary construction of memory with all the fallibilities by which memory works. Gamma (γ) is the continual reassessment and interpretation of present perceptions in terms of prior perceptions and interpretations.

...and the $\alpha\beta\gamma$ of feeling

When our nervous system is excited, a relation between the elements of the excitation results in a single harmonious disturbance, an emotion. Thus the various sounds made by the instruments of an orchestra strike upon the ear, and the result is a peculiar musical emotion, quite distinct from the sounds themselves. Emotion is essentially a hypothetic inference, a cognitive interpretation of physical processes, and every hypothetic inference, every cognition, involves emotion. Hypothesis, [*right abduction*], produces the sensuous elements

of thought, alive with feelings and insight. And induction, [*back* testing], produces the habitual element of bodily response. Deduction, [*left* reasoning], adds nothing to the premise but selects from various facts and brings attention to some part of the whole. Paying specific attention is the [*left*] volitional element of thought. (Peirce, paraphrase, *EP*:199)

The triologue of feeling, bodily process and reason works as an evolving, unconscious, background. Experience-acquired insight into bodily process precedes and produces cognition. (Damasio, 1995)

Pure Play and The Immune System

A Selection Versus Instruction Theory

Peirce's theory of Pure Play asserts that spontaneous, unplanned frolic is the most constructive path to discovery. *AT* education, psychoanalysis and method acting build on the same principle. The key to enabling this discovery is learning to not interfere with spontaneous adaptation. The unexpected *back* system responses evoked by *AT* lessons are stimuli that open the gates of perception and affect, arousing a challenge to engage the moment beyond the narrowed channels of sensory/motor habit.

The psychoneurobiology model of consciousness as a "recognition-selection system," rather than an "instruction system," affirms the efficacy of spontaneity. (Edelman, 1992:72ff)¹⁵ In biology, "recognition" is an adaptation of a physical attribute or skill developed in one domain to new situations in another. These adaptations occur on a continual basis without instruction.

Our immune system is a recognition-selection system. It responds to an invasion by foreign cells by recognizing among its existing repertoire of antibodies the one which happens to bind the invader. This is how the immune system determines which particular antibody to multiply. "A specific recognition event occurs even for new molecules synthesized by organic chemists, molecules that never existed before either in the responding species or in the history of the earth." (ibid:75)

An instruction theory, in contrast, would presume that alien molecules impart their shape to antibody molecules, thus teaching our immune system how to produce templates that bind the aliens. But that is not what happens. Instead of designing templates to fit invaders, we maintain packs of antibodies in wait for aliens.

When an alien appears, it encounters a population of antibody cells with a different molecule on each surface. The cell pack swarms the

alien. There is no teamwork. Only when our immune system recognizes that an antibody happens to bind some portion of an alien molecule does it stimulate that particular antibody to divide and multiply.

Spontaneous Learning A Recognition-Selection Process

Immune system recognition-selection parallels how we learn. The many possible meanings we could ascribe to an experience can be viewed as “mental molecules”—organized like the shapes of antibodies. Peirce’s abduction (Pure Play) is the recognition-selection process which discovers which mental molecule, which particular meaning, best fits the new situation. To allow this Pure Play we must bypass habitual responses. Learning to not interfere with this play becomes a lively pleasure. Interpreting situations and making decisions are not only effective but fun. Learning to not interfere liberates creative self expression.

In order to construct makeshift understanding, in order to absorb the complexities of the moment until we recognize a successful association, we must remain open and flexible. Although most abductive musings may be mistaken, they must be fostered for survival. Only by allowing the flow of wild ideas can we discover the one that works. That is why it feels good. When Pure Play chances a solution, like finding an antibody that “fits,” a survival problem transforms into a survival pleasure.

Icon, Index, Symbol The Building Blocks of Self

We are unaware of most of our body most of the time. External events and our grand thoughts distract us. But our background body sense is continuous and irresistible. Damasio finds that this background body state participates in consciousness and is formed from multiple somatosensory excitations. (1994:151ff) Neural and chemical events play in us, constructing anew, moment to moment, a body state that is neither a replica of the past nor entirely predictable.

[T]he [*left*] brain waits for the [*back*] body to [*right*] report what actually has transpired...[It] cannot predict the exact landscape the body will assume, after it unleashes a barrage of neural and chemical signals on the body, no more than it can predict all the imponderables of a spe-

cific situation as it unfolds in real life and real time. (Damasio, 1995:158)

Body image forms from connecting the moments of each body state into *left* consciousness.

[T]he continuity of [*left*] consciousness derives from the correspondence which the brain establishes from moment to moment. Without this activity of connecting, we would merely perceive a sequence of unrelated stimuli from moment to unrelated moment, and we would be unable to transform this experience into knowledge and understanding of the world...My memory emerges from the relation between my body (more specifically bodily sensations at a given moment) and my brain's 'image' of my body (an unconscious activity in which the brain creates a constantly changing generalized idea of the body by relating the changes in bodily sensations from moment to moment). (Rosenfield, 1993:8)

These theories characterize consciousness as a continuous reactivation of three sets of neural representations—sensations, reactions, interpretations—interpretable in terms of Peirce's *icon*, *index* and *symbol*:

(1) *Icon*. From how we use ourselves as we live, as well as from how we pay attention and to what and to whom we pay attention, we form an autobiographical, "topographically organized sensory map" of iconic "neural representations." These icons comprise our personal library of sensations (*firsts*).

(2) *Index*. Responses to these iconic representations become background feelings producing emotional states, indicating "not only what the body has been like in general but also what the body has been like *lately*." These indices comprise our personal library of reactions (*seconds*).

(3) *Symbol*: "Self" forms "when the brain is producing not just images [icons] of an object, not just images of organism responses [indices] to the object, but a third kind of image of an organism [as a whole] in the act of perceiving and responding to an object"). These symbols comprise our personal library of interpretations (*thirds*). (Damasio, 1995:242-243)

"A *third*...brings a *first* in relation to a *second*." (Peirce, *SW*:389) Our "self" evolves continuously from the reciprocal interactions among our iconic autobiography, its proprioceptive indices and our interpretive acts. (Damasio, *op. cit.*)

To Articulate AT—A Semiotic Approach

Inquiry into sensory-motor self knowing enables spontaneous experience which bypasses the channels of normal, narrowed, *left* governed postural habit. Allowing Pure Play to inform the ways we sit, stand, breath, speak and walk, lets experience deconstruct *left* triggered motor habit into spontaneous *back* functioning. This abductive mode of reasoning frees *right* feeling and *back* action to venture beyond habit.

A science of *AT*, however, requires a *left* vocabulary—to recognize, distinguish and relate the various aspects of consciousness, and to equip a navigation through our maze of inner experience (the signals that comprise consciousness). Peirce's tri-part logic invites a science of *AT*. His ten semiotic stages articulate how *right* body images (*firsts*), *back* body reactions (*seconds*) and *left* interpretations (*thirds*) interact to establish knowing. (Sheriff, 1994:31-47) We use them to explicate the stages of *AT* education and to chart the development of kinesthetic consciousness.

Signs alpha (α) through delta (δ) (Table 3-1) mark stages of preconscious, prelingual kinesthesia. These signs of inner experience build step by step to subjective awareness of our cerebellar *back* process, sign epsilon (ϵ). Then signs E through A mark progressively abstract stages of objective kinesthetic knowing.¹⁸

The heirarchical taxonomy of Table 3-1 is itself a story about how signs relate to one another. The signs are putative landmarks in the uncharted waters of *AT* communication. No sign sits still in its hierarchy. Signs continuously fade and reemerge as other signs.¹⁹

Successful science is based on an integrated set of stable reference frames which map its fundamental variables with accessible, relevant landmarks. The ten-signs of *AT* process are elusive and evanescent. Nevertheless, they offer hope for a public science of *AT*.

A Pupil's Observations

Habit

A habit is an involuntary unconscious action which evolves as we organize our life experience into what seems efficient, at the time.

Problems with Habit

1. Habit, being unconscious, is involuntary, without name. This removes habit from adaptation and evolution. The price of habit efficiency, of needing neither conscious thought nor word, is immutability and hence slavery.

Semiotics of Kinesthetic Knowing¹⁷

Stage	Description
Preconscious	
1. α (alpha)	Any moment of experience. A blip. Indeterminate
2. β (beta)	The beginning of a response; an inkling. Unconscious reaction to α . Possibility
3. γ (gamma)	Experience developing into a distinct but vague and wordless image or feeling. Sensation
4. δ (delta)	Preconscious bodily manifestation of β and γ . Experience, with noticeable bodily manifestation, reflecting a feeling, apparent to others, but still unconscious—as in blushing. Manifestation
Qualitative	
5. ϵ (epsilon)	Beginning to name. Internal dialogue about γ and δ . Subjectivity
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6. E	<i>Expressing</i> subjective awareness ϵ in words. Speakability
7. D	<i>Distinguishing</i> some element—a delta (δ) manifestation or E expression—from everything else, but without ordering. Nominal objectivity
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Quantitative	
8. C	<i>Connecting</i> distinctions (D) with one another (in an order) to tell a story, to identify relationships. Ordinal comparability
9. B	<i>Building</i> a yardstick with which to measure beta (β) through C; to correlate observations with an external standard. Measurement
10. A	<i>Analyzing</i> relations among alpha (α) through B to predict and understand. Theory

“Stage” follows the 10 levels of Peirce semiotics. Greek letters mark preconscious processes α , β , γ , δ leading to subjective experience, ϵ . Roman letters mark conscious processes E, D, C, B leading to theory A. Stages E through A of conscious process mirror preconscious ϵ through α with increasing abstraction.

Table 3–1

2. Habits develop out of passing personal interpretations of social, physical and emotional necessity. But habits survive their nascent moments. As we “stand,” we not only rise “to the occasion” but also “take a stand,” “stand to be counted,” “stand for and against.” These psycho-social “stands” are unnecessary to rise. Yet, when their expression inhabits our standing, we assert them at every rising.

Tactics of Rehabilitation

1. Alexander’s “inhibition” shows that we can counter automatic habitual initiation. When it is time to stand, we can think “Do not stand.” We can speak “Do not stand.” Then we can do “Do not stand”—and let our standing happen. When all goes well, we elude the burden of our habitual psycho-social standing and just pop up.

2. A cheerful easy-going encouragement (from self or teacher) that we are always at liberty to “take a stand” as aggressively, assertively, patriotically, enduringly as we wish—any time we intentionally choose—can help disarm our habitual resistance to change.

A seemingly counter-productive encouragement to “take a stand”—an allowing of the underlying motives of habit—was a surprisingly effective tool in my lessons with Ed. It worked because the encouragement to go right ahead and be hard-core-habitual rescued the psycho-social entailments of my standing habit from the tactful cloak of repression, from the deceptive insignificance which kept its tyranny secret.

I think we discover, in such tolerant encouragement, that we need take a social stand only when we decide to. This license liberates a thousand risings from involuntary, and usually irrelevant, self-assertion. What a relief!

(Ben’s *AT Journal*, 9/12/1995)

Sailing

The able sailor does not plot, he responds. He sees what’s coming by the ripple of the water. He hears what’s coming by the whistle of the wind. He feels what’s coming on his hair and cheeks before boat or sail respond by heeling over or slacking upright. The able sailor rides the wind, responding without much figuring out, allowing the wind to take him but in the direction he wants to go. Against the wind, the able sailor does not go head-on. He tacks left and right in a sensitive, continuously responding zig-zag which rides each shift in breeze.

Able sailing is joyous and relaxing. Why? Because it is a natural, spontaneous experience of unforced—and in a sense unplanned—rapport of body, boat and nature.

(Ben’s *AT Journal*, 3/13/96)