

# “To Take a Step”

## Use

Use is our *background* state of balance, coordination and muscle tone. Use can be “balanced” (integrated) or “awkward” (disjointed). (W. Barlow 1990:81-82)<sup>1</sup> Balanced use is allowing muscles to release to resting length, employing only the fibers that are necessary. Adaptable use is allowing muscles to deploy in an integrated, energy efficient way. This yields an interplay of muscles which maintains “a steady state” by minimal self-correcting oscillations “around a central point of stillness,” a “postural homeostasis.” (ibid) Awkward use (misuse) is failing to return muscles to resting length, asserting excessive force, using muscles in ways which disrupt coordination.

The Polarities of Use			
expanded	↔	contracted	flowing ↔ blocked
allowing	↔	anticipating	balanced ↔ awkward
accepting	↔	resisting	lengthened ↔ shortened
adaptable	↔	fixed	elastic ↔ stiff
loose	↔	tight	smooth ↔ jerky
poised	↔	posed	integrated ↔ disjointed
easy	↔	striving	united ↔ divided
released	↔	tensed	peaceful ↔ <sup>agitated</sup>

Table 7-1

## Reflexes: The Building Blocks of Use

Managing muscles and maintaining balance is largely accomplished by peripheral and central nervous system (CNS) reflexes.<sup>2</sup> They work together—outside of *left* consciousness—automatically integrating signals from vision, head position, ground contact, and motion detectors in our joints.<sup>3</sup> A muscular counterforce reflexively neutralizes gravity to maintain upright, vertical balance. (Basmajian, 1985:252-256) As objects are drawn to earth, surface upthrust forces are irresistible and independent of *left* will.

Other reflexes include ear and eye systems and CNS neck reflexes that foster head stability. Ear receptors detect changes in head position. When the body bends, ear receptors act to keep the head upright. Eye systems keep head and body stable. When a boat tilts and a horizon is visible, the natural response is to right the body to match the horizon, showing the influence of eye reflex on balance. When an airplane tilts and a horizon is not visible, sitting in the airplane produces a different response. Now peripheral antigravity reflexes respond to body contacts to keep head and body parallel with seat. (Roberts, 1978:258-262)

### **Simple Motor Reflex Components: alpha ( $\alpha$ ), beta ( $\beta$ ) and gamma ( $\gamma$ )**

Semiotic analysis illuminates reflex dimensions beyond the traditional dualistic categories of innate versus acquired, unconditioned versus conditioned, primary versus secondary. Innate reflexes reveal three components: alpha (predisposition), beta (reaction) and gamma (sensation).

#### **The *alpha* predisposition**

Alpha ( $\alpha$ ) is the initial immediate moment of detection—or the predisposition of our neural muscular system to detect the environment before contact. Sensory cells are preprogrammed to automatically respond when pressure is applied under a foot. These sensory cells are embedded in the muscle body. They relay information to the nervous system about muscle condition.<sup>4</sup>

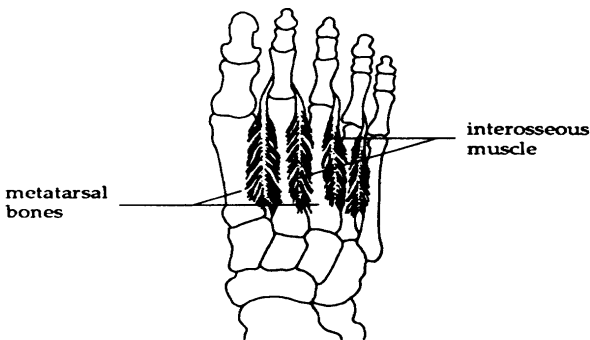


Figure 7-1

### **Foot Interosseous Muscles**

Drawing by Kathleen Ballard, 1988.

Courtesy of *Direction Magazine*

#### **The *beta* reaction**

The beta ( $\beta$ ) reflex is the reaction that follows the initial alpha ( $\alpha$ )

moment. Push on a foot and a leg begins to stiffen. This is especially evident in babies and young mammals.<sup>5</sup> As a foot supports us, contact-pressure spreads the muscles between our toes. Sensory cells embedded in these muscle fibers activate a leg muscle stretch reflex. (Ballard, 1988:171ff; Roberts, 1982:142) This leads to an increase in the firing frequency of motor units throughout the leg. This beta ( $\beta$ ) reaction is automatic, a local mechanism remote from central nervous system control. We detect changes of terrain through our feet independent of volition. Response is immediate and precedes awareness. It is this autonomous, sprung structure which enables movement.

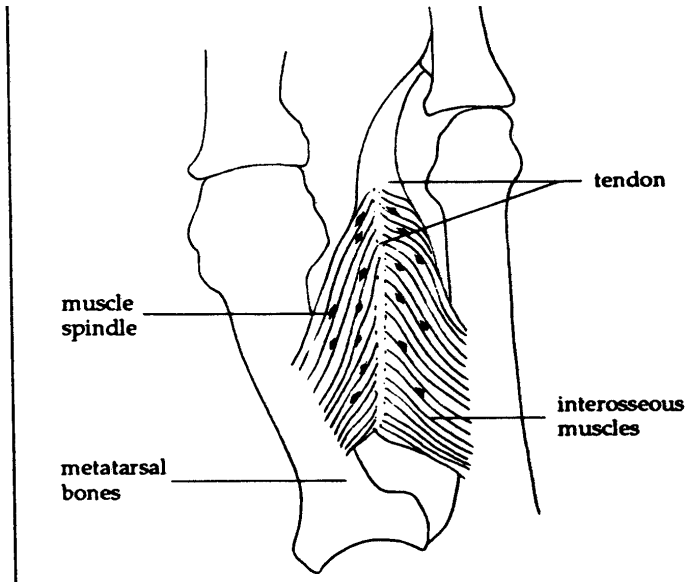


Figure 7-2

### Sensory Cells (Muscle Spindle) In Interosseous Muscle

Drawing by Kathleen Ballard, 1988.

Courtesy of *Direction Magazine*

### The *gamma* sensation

A third kind of reflex follows. We call it gamma ( $\gamma$ ). It is the preconscious sense that our leg is supporting and moving us. Gamma is as automatic as a beta ( $\beta$ ) reflex. This inevitable sense is a summation, a shorthand, for a complex of neuromotor reactions that we barely notice.<sup>6</sup>

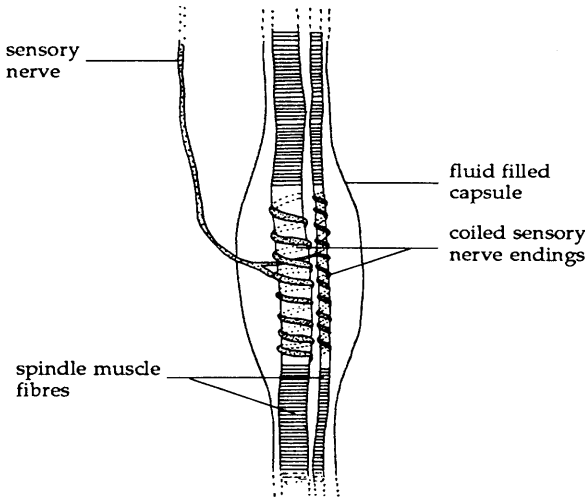
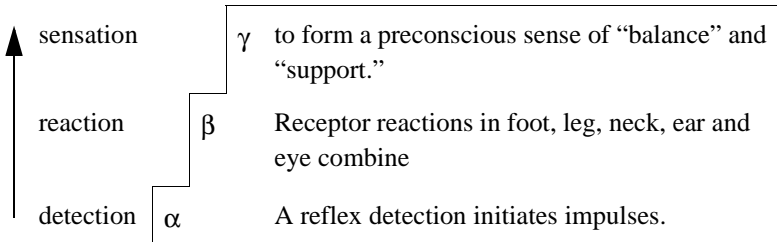


Figure 7-3

### Enlarged Sensory Cell (Muscle Spindle)

Drawing by Kathleen Ballard, 1988.

### Innate Reflexes in Standing



Read From Bottom

Table 7-2

### Acquired Reflex Components: delta ( $\delta$ ) and epsilon ( $\epsilon$ )

#### The *delta* response

Initially, we respond involuntarily to environmental forces. First we detect—alpha ( $\alpha$ ). Then we react—beta ( $\beta$ ). From that we sense—gamma ( $\gamma$ ). All this is automatic. These reactions, which are more prominent in infants than adults, teach the possibility of balance. (Roberts, 1976) But balance requires more than instinctual reactions.<sup>7</sup>

We also need acts of imagination, assessments and plans. Although simple reflexes are essential, we cannot learn without imitation and trial

and error. We watch, stand, fall, and feel. We watch some more, stand again, fall again, feel again. Eventually, by interpretation of experience, we learn how to deploy the muscles that stand and walk.

Our success at learning to stand and walk develops from our toddler sensitivity to primary reflexes. We use this *back* sensitivity to discern which muscles are working, how, and in what order. We become able

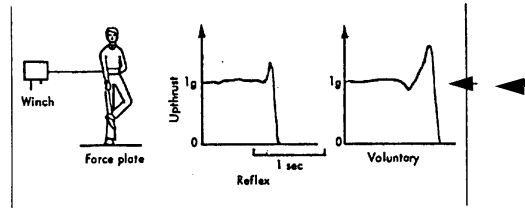


Figure 7-4

Note additional movement in voluntary hopping (see arrow.) This is a delta ( $\delta$ ) reflex.

### Delta ( $\delta$ ) Reflex in Voluntary Hopping

From T.D.M. Roberts, 1978  
 Courtesy of *Direction Magazine*

to approximate, at will, through a secondary level of motor control, what had first been reflexive. Instead of our leg stiffening reflexively in response to foot pressure, we learn to anticipate, to stiffen our limb voluntarily as our foot nears a surface.

Roberts calls this learned muscle tensing *anticipatory preemptive activity* because an acquired response preempts the reflex. We call it a delta ( $\delta$ ) reflex, a palpable but just as automatic muscular activity that combines a primary reflex capacity with a secondary muscular activity learned through experience. Delta reflexes are recordable in voluntary motor tasks, but are not present in primary alpha ( $\alpha$ ), beta ( $\beta$ ) and gamma ( $\gamma$ ) responses. (Roberts, 1978:262ff)<sup>9</sup>

Preconscious delta ( $\delta$ ) reflexes are the core of the vestibular cerebellar *back* self. Delta reflexes, our embodied habits, are discrete, palpable muscle patterns manifest in posture, gait and voice. We notice them only when they are interrupted, such as when there is one less stair than expected or during an *AT* lesson.

When we decide to do something, like stand up, the neuro muscular response that carries out this decision is a delta ( $\delta$ ) reflex.

## Stages in a Movement

Stage	Action	Example
epsilon $\epsilon$	subconscious wording	"I stand"
delta $\delta$	learned response	habitual management
gamma $\gamma$	diffuse sensation	sense of support
beta $\beta$	instinctual reaction	foot and leg react
alpha $\alpha$	initial detection	foot touches ground

### The *epsilon* summation—a thought

The epsilon ( $\epsilon$ ) stage is our silent internal dialogue, our unexpressed flow of thoughts to ourselves. These automatic thoughts, framed in words, are different than the third level gamma ( $\gamma$ ) sensations, although they draw on them. Epsilons ( $\epsilon$ ) involve assessment of past experience and projection of future possibility. They may reflect experience accurately or they may fly in its face. They can be negative or positive. They include the vague thoughts that sum our sense of balance and our overall use. We experience ourselves as somewhere on the continuum from “smooth” to “jerky,” “loose” to “tight,” “balanced” to “awkward,” “peaceful” to “agitated” (Table 7-1). Even though we may be hard pressed to articulate these epsilon ( $\epsilon$ ) assessments, they are an essential element of our ability to get around. Epsilon ( $\epsilon$ ) thought reflexes impact our future movements, our future response capacity. This subjective inner dialogue is the beginning of abstract thinking.

### What Versus How

As toddlers, we are imbued with unbridled curiosity and a relentless will to persevere. We explore. We learn. Through delicate kinesthesia, we learn how our muscles work and feel, and we notice the actions they produce. As we evaluate how we succeed and fail, we gradually acquire knowledge about the world. That worldly knowledge is, of course, not actually of the world but only what has been abstracted from our

vestibulocerebellar bodily learning. As we learn to reproduce secondary muscle patterns that mimic and replace primary reactions, we form corporeal metaphors that guide us through life and become the basis of that mighty ego which we call our real self.

This vestibulocerebellar learning continues throughout life. It *is* living. But we are largely ignorant of this body-learning process. As we grow from toddler to child, we become preoccupied by increasing layers of abstraction. More external, worldly concerns capture our attention. Primary kinesthetic learning fades. We lose our sensitivity to bodily feedback and with it, our ability to adapt to new situations. However, this decline in adaptability, this loss of liveliness, goes unnoticed. Our criteria for measuring success changes. We are no longer turned-on by mimicking and by the joy of new moving. We no longer care about the how of standing. We assume we've got that down. We only care about results, whether we end up standing. This becomes the sole measuring stick we use to gauge success.

However, simply being able to stand does not help when, as adults, we start caring again about how. We are then at a loss—because we have so lost touch with the underlying *back* process that does the standing.

## Stanislavski's Analysis of Gait

*In life we [may] walk incorrectly whereas on the stage we are obliged to walk correctly as nature intended and in accordance with all her laws.*

Stanislavski

Persons with back, joint or limb injuries develop a compensatory gait which aggravates their existing problem and injures them further. They need to relearn their standing, sitting, walking use. Stanislavski's "Method of Physical Action" is one way to do this. (Benedetti, 1982:63-71; 1988:316-317; Stanislavski, *CAR*:85-106) Actors change movement and gesture patterns from role to role. This change flows as much from mental preparation as from physical rehearsal. "External elasticity [of movement] is based on our inner sense of the movement of energy." (Stanislavski, *BAC*:71) By paying attention to means, we can gain access to the underlying interactions.

The human leg...from the pelvis to the foot [is like] the understructure of a Pullman car...Its multiplicity of springs ... absorb and moderate the shocks in all directions, [providing the strength and agility to keep us upright]...

The upper part of the car, where the passengers sit, remains almost motionless, despite the fact that it is moving at a terrific rate of speed and being buffeted all around. This is what should happen in a person's gait when he is either walking or running. At such times the torso with the thorax, shoulders, neck and head should remain unshaken, serene, entirely free in their own movements...

This balanced movement is

made possible to a large extent by your backbone. Its purpose is to act like a spiral spring bending in any direction. [It adjusts] at the slightest movement, in order to maintain the equilibrium of the shoulders and head, which should... remain tranquil and free from all jerkiness...

While head and torso remain serene,

pelvis and...hip joints...[remain free to] moderate side shocks and...thrust the whole leg forward each time we take a step...The better the leg is swung forward from the hip, the more freely and lightly it will swing back...This swing of the leg from the hips, either forwards or backwards, should not depend on our torso, although it often tries to interfere by bending forward or back to add momentum to our walking motion which should be accomplished only by our legs...

Leg action is free and light. As a leg is swung forward, it will swing back without assistance or interference from torso.

In walking...the hips rise and fall. [As the] right hip is raised, [and the right leg] thrusts...forward, your left hip falls [and] your left leg swings back. As this happens you feel a rotary motion in your hip joints.

The next springs below the pelvis are the knees....They help move the body forward and they also absorb...shocks...

A third set of springs...are situated in our ankles, feet, all the joints of our toes....

The functions of the various component parts...do not operate separately, but simultaneously and interdependently...It is impossible [for the actor but necessary for the scientist] to write out all the mutual relationships, mutual assistance. [To



apprehend how the system operates in its full complexity] you have to discover these things within yourself [experientially] with the aid of your own sensations while you are in motion...

We have to begin from the beginning—and learn [again] to walk, to speak, to see, to act...Movement and action, which take their source in the recesses of the soul and follow an inner pattern, are essential. (Stanislavski, *BAC*:48-71)

Dedicated attention to kinesthesia keeps us aware of the interplay of motor and sensory nerves, of how our muscles work. Observation without action magnifies these inner patterns. Looking, without attempting to change, stimulates our inner sensitivity and yields better results. Understanding motor skill leads to becoming aware of and inhabiting these innate and acquired processes—to know, use and enjoy them.

## To Un-Learn a Misuse

*Truth grabs error by the scruff of the neck in the mistake.*

Lacan<sup>9</sup>

*Practice doesn't make perfect—but in changing one's standing, insight evolves into the how-it-is one stands.*

Alexander, paraphrase

The means for changing use are to not rely on habitual misperception but instead to enter a process of listening, watching and wondering that undoes the misperception and allows us to *back* perform better than we can *left* analyze.

After long confinement for a leg injury, a pupil takes his first steps. When he makes the first attempt to resume walking, impeding factors manifest, comprising a set of experiences acquired from the injury and confinement. (Alexander, *CCCI*:95-97) The stimulus to walk triggers an immediate, habitual response involving subconscious processes that had been lowered by his experiences associated with the accident.

To change walking, to “get inside the act,...the ‘how it is’ that [we] stand,” the first step is to “prevent [acquired, habitual] subconscious guidance and direction associated” with walking. (ibid) The teacher guides a pupil “with the aid of manipulation” to allow “the satisfactory use of the mechanisms in a sitting, prone or other position,” thus bypassing habitual delta stage subconscious control. (ibid)

The details involved in teaching a changed gait differ with each pupil. When there is improvement in general coordination, in head/torso relationship, the peripheral processes become integrated and a corresponding improvement follows.

## Walking and Moving

Alexander says:

I can no more teach you to walk than I can teach you to breathe...[I do] not treat specific defects. [I do] not undertake specific cures...If you have something wrong with...your walking [and] you ask me to teach you how to walk, I will look at you and I will say to myself, 'Ah, this walking does not matter'...These young men and young women [in my training class] were never taught to walk, they were taught how to use themselves. (Alexander, 1925:A&L:152)

Yet many *AT* teachers have developed ways of experimenting with standing and walking to teach essentials of how to use one's self—among them Marjory Barlow, Judy Liebowitz and Marjory Barstow.

### Barlow

While waiting for a pan of boiling water in the galley of a small boat, Marjory Barlow realized that her heel did not fully contact the deck (1985). She then noticed she had been standing with her pelvis swayed forward. By gently stopping this forward sway, she indirectly influenced her pelvis and her center of gravity to shift backwards. This resulted in greater heel contact with the deck. By this process of self observation she became aware of the plexus of nerves located in her foot which are linked to her leg's lengthening reflexes. She discovered that, although these deeply ingrained reactions cannot be controlled directly, we can bring them into awareness.

### Liebowitz

*The point I remember most vividly from the array of new ideas that were presented to us by our inspired teacher, Judy Liebowitz, was that our movement and posture were habitual: they were learned intuitively by observation and imitation...To get the optimum utility as well as maximum expressibility from our bodies and voices, we would have to relearn from scratch, or at least rethink, how to move and speak.*

Kevin Kline

Judy Liebowitz had polio. Her atrophied leg made walking difficult. From her *AT* lessons and self study, she developed a series of movement explorations that reveal the essence of walking much like 'imagined Ah' (Chapter 6) reveals the essence of balance and vocal use. (Liebowitz and Connington, 1990) Like Stanislavski, Liebowitz explored the elements of gait segmentally. Her pupils began by

standing with their legs hip width apart, weight equally divided, directing a release of head, neck and back into length and width, directions to be carried on throughout.

## Liebowitz Procedures for Exploring Gait

(Derived from AT lessons with Liebowitz)

Shifting weight side to side: With head and torso in easy, balanced extension. Gently push off so that one foot balances on ball, shifting weight to the opposite leg without lateral hip displacement.

Bending knee: Leave weight equal on both legs. Begin with weight on heel and ball. Bend knee on one leg, shift weight to ball without lateral hip or shoulder displacement.

Side-to-side pelvis rotating: Leave head and shoulders stable, facing forward. Easily turn hips from side-to-side to face side walls.

Up-and-down pelvis rotating: Leave head, shoulders and torso stable. Extend ankle and foot of one leg with knee remaining extended. Initiate the movement from hip, not foot. Remain balanced equally on both feet.

Front-to-back pelvis rotating: Leave head, shoulders and torso in neutral extension. “Bump and grind” easily, rotating pelvis forward and back.

Side-to-side upper torso rotating: Leave head, shoulders and pelvis stable. Allow arms to swing with the torso.

Combine side-to-side pelvis with opposite side-to-side upper torso rotating and arm swinging: Pelvis and ribcage twist in opposition with head stable. Allow arm swing.

Direct head/neck/back release, begin opposite torso/pelvic rotating and arm swinging, simultaneously shifting weight to one leg, bending opposite knee, allowing move into walking: Pay attention to all the elements of walking, front-to-back hip rotation, side-to-side hip rotation, up-and-down hip rotation, head balanced freely while walking with ease.

Although shifting weight from foot to foot seems simple, there are myriad nuances. Side to side movement can originate from ankle or hip. Shifting from the hip distorts the torso. Shifting from the ankle brings the opposite heel off the ground. Force can originate either from the leg which receives the weight or from the opposite foot pushing off. The

latter is achieved by extending the pushed-off foot through the ankle and leg so that the weight on that foot shifts to the ball. As a pupil pushes off and shifts to one side, he may inadvertently tilt his head, shift his hip and contract his torso. The teacher guides the pupil to lengthen and widen and to notice what happens. Stand. Shift weight from leg to leg. Stand again. Notice sway.

Liebowitz's procedures are explorations not exercises, and not formulas for correct movement. She encouraged her pupils to explore each procedure easily, freely, without attempting to get it right. The purpose is to allow an integration between voluntary and innate process. Her pupil's work with each of the simple movement segments for a few minutes at a time. Long term students explore them over a period of months and years. After exploring each procedure, the pupil takes a few steps to notice how that segmental action is a palpable and malleable element of the walking process.

### **Barstow**

The longer I work with [AT] the more I realize how very simple it actually is. The simplicity and subtleness seem almost beyond comprehension. The real learning problem is not with the degree of ease or difficulty [of any activity] but [with] how the acquired habits of self-use have affected our sensory mechanism...The only true guidance needed [is the] sequence of directional thinking which must carry through no matter what movement is to be accomplished...[In my training course with Alexander] learning to watch myself in simple everyday activities was a challenge...Swinging into an habitual walk was quite different from watching to see how I was performing that walk. (Barstow, 1984 in *UOS*:ii-iii)

Barstow used less manual intervention than other *AT* teachers and taught in groups often exceeding one hundred pupils. She told her pupils to “delicately move” their heads, begin the “sequence of directional thinking,” then “swing” into taking a walk. Pupils are guided to watch how they perform, to recreate for themselves the learning she experienced in her own training.

I was sitting,... ‘directing’ a mile a minute, doing my Alexander best. Marj came over, steady, unhurried, and placed the tip of her index finger ever so lightly upon my rigid chest and said ‘Sit

back. Why don't you just take a good old slump?' I did what she asked...

Marj seemed to be taking people for walks. When it was my turn she stood behind me and placed her hands along the sides of my neck. I had never felt such a light touch. Immediately, I [experienced movement] through my entire body [for] what felt like miles in every direction. Marj told me to walk and I thought she had to be kidding. I had forgotten how! But I did know that I was feeling incredibly buoyant. I was seeing with extraordinary clarity, and for the first time in over a year I had no pain in my lower back. I heard her say, 'Just move a knee forward.' I did what she said, not knowing how. I had entered what I later heard Marj describe as 'unknown territory.' ...I heard an old memory of my father's voice echoing in my ears, 'What do you think you are, a bigshot, a bigshot, a bigshot.' (Fertman, 1988:58-59)