

## Developing Kinesthetic Acuity

*“Almost anyone can learn to think or believe or know, but not a single human being can be taught to feel. Why? Because whenever you think or you believe or you know, you’re a lot of other people, but the moment you feel, you’re nobody-but-yourself. To be nobody-but-yourself in a world which is doing its best, night and day, to make you everybody else— means to fight the hardest battle which any human being can fight: and never stop fighting.”*

~ e.e. cummings



### Overview: Kinesthetic Learning & Kinesthetic Dystonia

**Recommended Reading from the Appendix:** *Kinesthetic Dystonia: What Bodywork can Offer a New Physical Education* by Thomas Myers. *Journal of Bodywork and Movement Therapies* (1998).

In many religious and spiritual traditions the physical body is considered suspect with the realm of bodily sensation subjugated as a means to transcendence and enlightenment. The suppression of feelings, sensations and physical discomforts is a process that will be familiar not only to those of us who sat still on hard church pews for Sunday mass or synagogue but in the decades-long educational process in which we learn not because of our body or through our body but *in spite of* our body. Yoga is one of the few spiritual traditions in which inquiry into the sensate world of the body is most often the starting point and the launching pad for self-discovery. Whether observing and interacting with the visible body (the physical structure), the invisible body (the energetic movement of prana and breath) or registering the even more subtle presence of feelings, emotions, thoughts or images, Yoga practice is intended to give the practitioner the ability to accurately gauge the state of the body, breath, mind, emotions as well as the consciousness that is aware of all these elements of experience. Having access to this information allows us to make more skillful choices and to command our experience in relationship to a changing world.

The practice of somatic inquiry, whether as movement exploration, formal asana practice or specific breathing patterns gives us access to subtle and highly differentiated sensory information.

Over time we can develop the ability to discern subtle distinctions between sensations—to recognize when sensation is indicating an ideal pathway for conduction of force (alignment) or to acknowledge when painful sensation is asking us to adjust and make a course correction. Little-by-little we begin to be able to make correlations between patterns of feelings and sensations and the co-arising of thoughts and emotions as well as precursor states to sickness and disease. Rather than simply having a head that carries the body around, it is possible to develop a rich and vast resource of embodied understanding from which to inform our decision-making. The way in which we access kinesthetic information, however, is very different to the way in which we access theoretical or cognitive understanding. The purpose of this article is to look at some of the steps in developing a more heightened kinesthetic sense.

*“An infant who has just learned to hold his head up has a frank and forthright way of gazing about him in bewilderment. He hasn’t the faintest clue where he is, and he aims to learn. In a couple of years, what he will have learned instead is how to fake it: he’ll have the cocksure air of a squatter who has come to feel he owns the place. Some unwanted, taught pride diverts us from our original intent.”*

*~ Annie Dillard, from Pilgrim at Tinker Creek*

As human animals our learning takes place primarily through three sense channels:

1. Visual (what we see)
2. Auditory (what we hear)
3. Kinesthetic (what we feel).



For most people educated within a Western context, learning takes place almost exclusively through the first two sensory channels; the visual and auditory senses with the kinesthetic sense remaining undeveloped and largely ignored. We might call this lack of embodied awareness a kind

of *kinesthetic illiteracy* comparable to blindness in someone who is visually impaired or deafness in someone with an auditory disability. Kinesthetic illiteracy is an inability to register felt sensation—a kind of bodily numbness that disallows the gathering of somatic sensation towards any kind of meaningful experience. Thomas Myers has coined the term *kinesthetic dystonia* as a way of acknowledging that it is possible to be limited and even disabled in our range of embodied expression.

To comprehend the significance of kinesthetic learning let's first define this sense. Kinesthetic information is that which we feel through stimulus received by “muscle spindles, Golgi tendon organs<sup>1</sup>, stretch receptors, baroreceptors, interoceptors, somesthetic data on heat, touch and pressure from the skin, and the vestibular apparatus.”<sup>2</sup> Kinesthetic information also includes vibration that can be felt through the bones, in particular, through the highly innervated outer layer of the periosteum of the bone. Our kinesthetic sense lets us know what is going on inside the body and where the body is in relationship to the environment. The kinesthetic sense is an **interoceptive**<sup>3</sup> sense -- to acquire this information we have to draw the awareness inside the body. No one else can perceive this kinesthetic information as accurately and as acutely as the individual living in that body. In this regard, perceiving, defining and moving in response to the information gathered by our kinesthetic sense will always be an inside job. In contrast the auditory and visual senses are **teleceptors**.<sup>4</sup> The word “tele” means “a short distance from” thus teleceptors, such as our eyes or ears, detect information in the external environment. While the sense organs ideally work collectively to produce the most refined perceptual reading possible, there are inherent problems in attempting to shape a movement or determine a safe range-of-motion when we draw information exclusively from what the teleceptors.

When we learn primarily through what we see or hear “out there”, as in our teacher's demonstration, through looking at a still photograph or video, or through hearing our teacher's spoken instructions, our sense organs must gather this information from outside the body. This information drawn from outside the self must now be translated inside the body. Additionally, the information provided by what we see (e.g. the image of the teacher demonstrating a posture) and what we hear (her instructions) does not necessarily provide us with enough information for translation into our highly individualized structure. When we form a visual image of how a posture is supposed to look, that image does not tell us how it is supposed to feel when we are well aligned. Further, we may be attempting to replicate a form that *looks “correct” but feels wrong*, uncomfortable or even injurious because inevitably the structure that is demonstrating a movement is different to our own. There is also a depth and breadth of subtle information about the quality, texture, rhythm and nuance of any given movement that can only be transmitted by feel. For instance, when two people hold hands and skip side-by-side they have to learn to match the rhythm, speed and quality of bounce in each other's movement to move in harmony. All of this subtle information is being communicated through the inferred information coming from my partner's body through his hand to my hand and into my nervous system. When we hold hands it's

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<sup>1</sup> A Golgi Tendon organ senses change in muscle tension. It is a proprioceptive sensory receptor organ made up of strands of collagen that are connected at one end to the muscle fibre and at the other merge into the tendon proper.

<sup>2</sup> Kinesthetic Learning by Thomas Myers, Journal of Bodywork and Movement Therapies magazine, April 1998

<sup>3</sup> ibidem

<sup>4</sup> ibidem

surprisingly easy to replicate the subtlest movement. Imagine attempting to teach someone how to match your movement by visual or auditory cues alone.

There is a curious phenomenon that happens when we attempt to learn movement exclusively through the teleceptors. This phenomenon is heightened when we are overloaded with rapid-fire instructions, especially when these instructions are given without sufficient time to trial the information or pause for integration. The more the auditory and visual senses become overloaded the more we may shut down our kinesthetic sense while we are busy thinking about and interpreting this complex information into our structure. As this is happening we may become more and more distanced from the sensory apparatus that is most likely to provide us with information about our interior experience.

Thomas Myers clarifies this point beautifully in the somatic experiment whereby dyads working together attempt to teach each other movement. In this experiment one person sits facing another with hands touching. Partner A takes the role of guide and Partner B closes her eyes so as to exclude visual cues. If you attempt this experiment you will discover that the guiding partner can move in very complex patterns, shapes, directions and at almost any speed without losing her partner. In the second experiment we move the hands two inches apart and both partners keep their eyes open. As one partner attempts to follow the movement through the visual field alone, she discovers how difficult it is to accurately match the movement, especially if the two hands are doing two different movements. She may also find herself holding her breath, tensing her body and struggling to register the movement of each separate hand. In the last experiment we maintain the space between the hands and ask our partner (who now has her eyes closed), to move according to our instructions. Having trialed this experiment with hundreds of yoga students throughout the world people unanimously agree that it is easier to follow movement through feel, with the visual aid being useful but slower and the exclusive auditory instructions cumbersome at best. Research shows that “kinesthetic guidance can be translated into behaviour 30 times faster than visual guidance can and many thousands of times faster than audio guidance.”<sup>5</sup> How can this information inform our practice and teaching of Yoga asanas and movement?



<sup>5</sup> Birdwhistell R 1971 Kinesics and Context. Penguin Press, New York, NY

Congruent with the underlying premises of the pedagogic model adopted within my teacher training programs and intensives, kinesthetic information is sourced through the individual being able to self-reference. For this to happen students need to be encouraged to listen to and form a loyal allegiance to the information provided by his or her felt experience. For many Yoga students who have learned to give greater allegiance to a method than to their own direct experience, being given permission to listen to and be loyal to inner experience is nothing short of revolutionary. It would not be an exaggeration to say that for some it is also a politically subversive act to give their own direct experience primacy over the indoctrination of a teacher, method, technique, culture or tradition.

Simply because a student is able to perform sophisticated and difficult asanas does not necessarily mean that they are kinesthetically adept. Often such a person has learned to completely override their own kinesthetic impressions in order to perform a posture— forcing the body to match her visual or conceptual idea of the form whilst ignoring the information being relayed through the proprioceptors. I have had many experiences of working with students who have learned Yoga postures primarily through a “monkey see, monkey do” replication process who despite years of technical training do not have a clear felt understanding of how their own body can move with ease. And because they do not have access to their felt sensation, nor a clear process for drawing meaning from it, they also are unable to learn from their experience, or to change in response to strong warning signals from the body.

Sometimes the teacher’s aesthetic ideal of how a posture should look does not reflect the actual truth of the anatomical structure or it’s movement abilities and limitations. Students dominated by a rote-learning model may strive to make their postures look right despite feeling wrong. This process is so self-perpetuating that eventually the wrong feeling translates as the right way, mainly because it has been deemed to be correct by an outside expert. Many of these practitioners are in chronic pain and repeatedly injure themselves as a result of ignoring their kinesthetic sense. What is more remarkable is the degree to which such a person will refuse to adopt any new movement strategy if it does not match with their conceptual idea or picture of the movement. Even when offered alternative positions and approaches to a movement that are more suitable to their structure and through which they can feel an immediate alleviation or cessation of pain, many continue to choose the position that reproduces the idealized form. This refusal to adopt a new movement strategy in the face of pain may be influenced by the myth that there is no gain without pain when in fact no pain is our gain. When the proprioceptors in our tissues signal warnings in the form of pain they are trying to tell us we need to make a course correction. It can be sobering to realize that our ability to feel pain is very much tied to our survival. Those suffering from a rare genetic condition called Congenital Insensitivity to Pain with Anhidrosis<sup>6</sup> (CIPA) do not register even the most acute painful sensations. Many do not survive childhood deprived as they are of the natural alarms might tell them that water is scalding hot, that a bone has been broken, or a tongue bitten through.

Often there is much status to be gained from the performance of extreme movements, even when it is to the detriment of the performer. Such a person may be driven to self-harm in Yoga practice because of the kudos to be gained through the presentation of virtuosic and radical displays

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<sup>6</sup> Inability to sweat properly.

of flexibility as proof of her success in the competitive Yoga marketplace. As teachers, we need to be aware of these cultural influences as we attempt to offer real and meaningful somatic education.

Even without these outside pressures, many students attending Yoga classes for the first time have spent years completely divorced from the physical body. The physical education they received in school may have amounted to little more than mechanical repetitions of callisthenic exercises, running around a gym track or the rough and tumble of group sports. Rarely, however, do our formal educational institutions teach children about integrated alignment, functional movement, how to care for the body or how to touch with sensitivity. It is remarkable to me how often I encounter an adult in their forties or fifties who received gymnastic or dance training as a young child and how, even years later, these early kinesthetic imprints give them a clear advantage in learning coordinated movement as an adult. Many adults from the current generation have the added advantage of having been physically active in their childhood: walking or biking to school, climbing trees, riding horses, balancing on fences . . .all these experiences increase kinesthetic skills. It will be interesting to see how the current generation, many of whom do not walk or bike to school and whose spare time is spent in front of a computer monitor or cell phone, will fare in the kinesthetic arena.

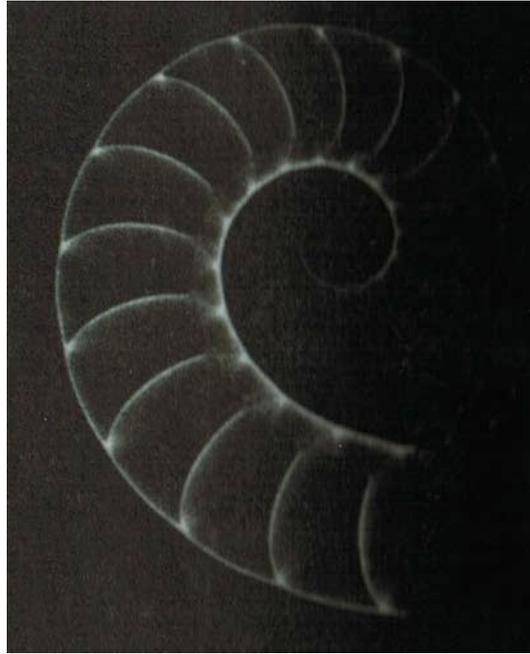
As we progress through this training program it will become apparent that the early human developmental movement patterns are learned through a self-referential process of sensing, feeling and acting in response to internal impulses. To someone who has supplanted this kind of internal process with intellectualization of movement, the inward arc of this process can feel confusing, disorienting and sometimes frightening. Here we may encounter new sensations, feelings and emotions that are both familiar and unfamiliar to us. If we have been divorced from our sensate world of the body most of our lives, the movement inwards can be as challenging as any journey into uncharted wilderness. For this reason it is crucially important that the teacher creates a safe container for the process of retrieving total sensory capacity, and provides ongoing reassurance and support in order to build the student's confidence and trust in the process.

To support kinesthetic learning during teacher training we also spend many hours learning how to sensitize and refine our touch as a means to drawing the student's awareness to her kinesthetic realm. In the beginning both giving and receiving touch as a form of communication may feel vague and less certain than the more objectified realm of images and words. However as we become more adept at offering each other intelligent assistance through touch, we will discover that it is possible to communicate an almost infinite range of complex stimuli through the skin that is simply not accessible through any of the other sense organs.

The purpose than of physically "adjusting" a student becomes less about correcting and more about helping the student access a sensory memory bank, which she can then refer to in the future. For instance, if I help a person to feel the sensation of force being transmitted through the bones across the joint spaces, this information is not just discrete or isolated to that particular form; it is information that she can use in any movement. As teachers we will also learn to teach from a "physical" language that refers to this memory bank of sensation and describes the feeling the student may have when the alignment is integrated. Visual demonstration can also be very powerful, not so much for showing specific position but rather for showing the dynamics of how movement arises organically.

Finally, the premise that the teacher knows what the student is feeling has no scientific basis whatsoever, unless of course the teacher is directly wired to the kinesthetic apparatus of the student. Quite simply, teachers who believe that they can gauge a student's threshold for movement are experiencing a massive hallucination of their egos. The assumption that the teacher can determine range of movement, how long a student can stay in a posture and what movements and positions are possible for a student, is the basis upon which Yoga students are injured throughout the world each day. It is unsafe for the student but it is also unsafe for the teacher. When the student is drawing on a non-negotiable external reference in the form of the teacher's directives this effectively removes the student's capacity to make skillful choices. Such a pedagogic model is also unsafe for the teacher, creating an environment in which students rarely, if ever, tell her about discomfort or injuries that have been incurred through unsound practices. When communication lines remain open, strategies and practices that are unsound can be removed from the teaching repertoire so that a teacher is constantly improving his or her understanding. Even the safest, theoretically sound movement, practice or sequence can be made unsafe when it is filtered through an unsound pedagogic model that discourages the student from listening to and trusting her own inner perceptions.

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## A Continuum for Developing Kinesthetic Acuity Sense-Feel-Act-Deduct-Evolve

- 1. Establish a Perceptual Baseline (How am I when I begin? Where am I when I begin?).** This becomes my kinesthetic reference point. In order to establish a perceptual baseline we **create a deliberately simplified space** to reduce the amount of stimulation entering the system. A deliberately simplified space can be lying supine in Constructive Rest Position, sitting with legs crossed, standing in *Tadasana* (Mountain Pose) or lying down in *Savasana* (Corpse Pose). While staying in an attentive yet relaxed state, we learn to inquire as to how we feel physically, energetically, emotionally and mentally, noting that there is no ideal to the process of perception and thus any experience is welcome as useful information. Then as our practice proceeds we learn to note changes (both positive and negative) from this baseline measurement.
- 2. Establish an Awareness of Neutrality of Sensation.** It is only possible to register kinesthetic information because there is a relatively neutral ground of sensation as the backdrop to more specific sensation. Just as the silence in a room allows us to hear the sound of a bell clearly, being able to settle into a non-reactive, relatively homogenous bodily experience supports our ability to discern specific, localized and distinct variances from our baseline.
- 3. Create a Sensory Memory Bank.** This involves making correlations between specific practices with specific sensory experiences. These correlations are then stored as a resource for future practice. A sensory memory bank is a valuable resource but it can never be absolutely definitive because the body is constantly changing. For instance, after a knee injury it may be painful to kneel and the sharp and uncomfortable sensations on the inside of my knee tell me so. Yet, after months, and possibly years of tissue regeneration as well as remedial movements and strengthening, I may be able to kneel again without knee pain. The memory of the sensations that preceded the knee injury and subsequent pain are valuable resources, but it can be self-limiting to assume that in the future certain movements can never be practiced based on the sensations we felt in the past. Tentative and judicious exploration can often prove otherwise.

**4. Extrapolate Meaning from Sensory Information.** In order to extrapolate meaning from my sensory experience it is useful to do one thing at a time to be able to discern a clear relationship between cause and effect. It is only when I am able to do this that I can replicate my experience. This is important for future practice and also for the archiving of Yogic practices for future generations.

**5. Determining Sound and Unsound Practices:** What is the immediate effect of the practice? What is the effect several hours later? What is the effect over the course of days, weeks, months and years? A practice that feels good while we are doing it but creates pain and discomfort or causes a feeling of energy depletion by the afternoon cannot be considered sound.

**6. Uncovering Unconscious Higher Allegiances** that perpetuate poor choices. If there is an unconscious process in operation in which our first and highest priority is to remain loyal to a theory, principle, technique, method, teacher, dogma or even to an ambition, this higher allegiance may short circuit our ability to make skillful choices. Our higher allegiance may also prevent clear thinking and impede our ability to problem solve outside the narrowly confined restraints of the preexisting alliance. Even when an effective solution is discovered it may be jettisoned if it does not tally with the overriding power of the existing paradigm. If you have a student who continues to practice alignment strategies that perpetuate pain and reinjure, even after being shown correct techniques that ameliorate or cure the existing problem, that person is very likely under the spell of an unconscious higher alliance. Keep in mind that this higher alliance may represent an important keystone in the person's identity. The student's identity may have become fused with their alliance to a technique, tradition, teacher or other system of knowledge. Breaking this alliance may be unconsciously associated with a dissolution of self — literally a little death. A higher allegiance may also give me an immutable formulaic certainty that buffers me from the mystery and chaos of real life. When certainty is preferred over dynamic aliveness it is unlikely that practice will lead to a more liberated expression of self.

**7. Information into Evolution:** We return full circle. Having acquired years if not decades of information stored in our sensory memory bank, in the present moment allow this information to drop into the substratum of awareness. If something is relevant to the moment, it will undoubtedly percolate up into awareness to serve the moment. But it is also possible that what is happening now is an entirely new experience, requiring an entirely new solution or strategy. Cultivating an intelligent state of “not-knowing” sustains the beginner's mind: open to new possibilities, new options and new ways of being.

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