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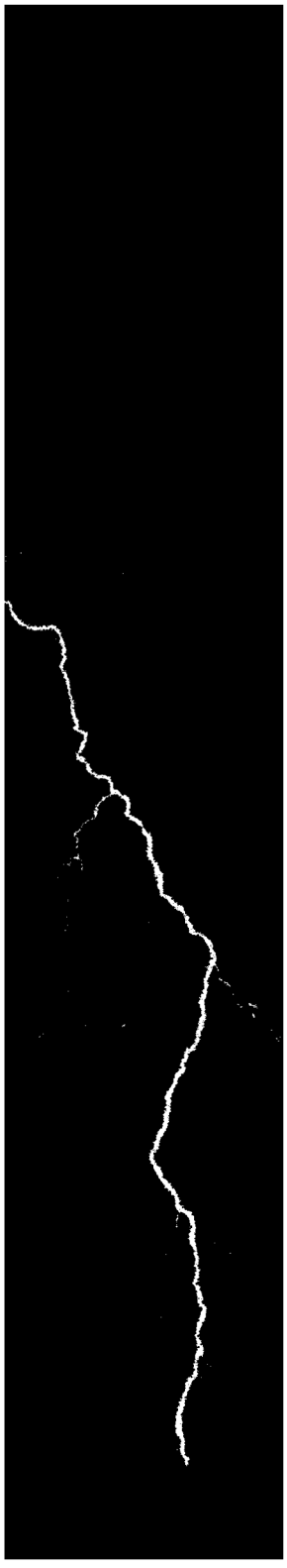

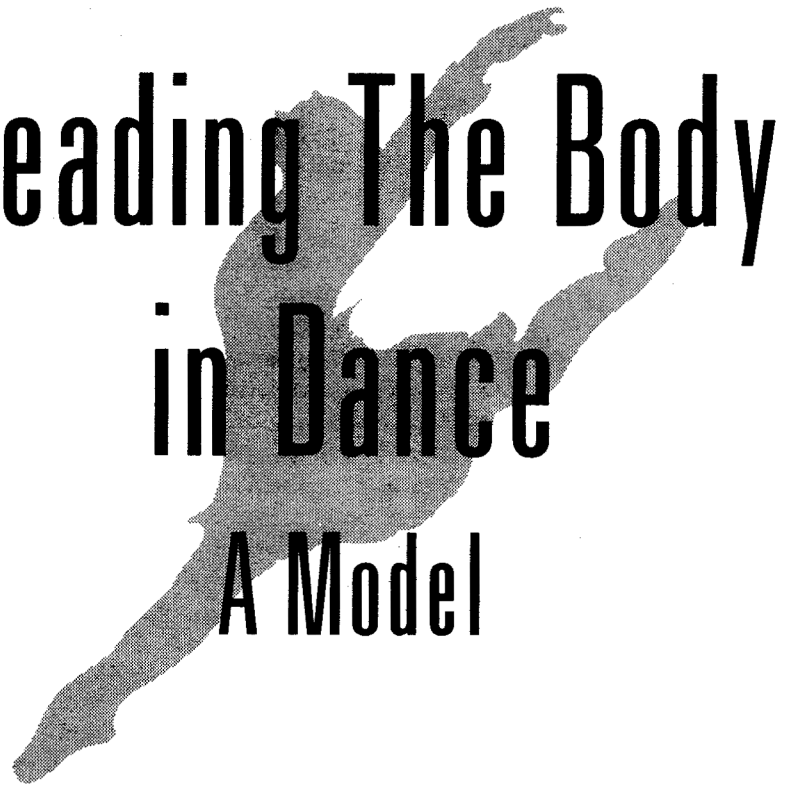

Reading The Body in Dance
A Model

Hubert Godard

A few years ago, the Rolfing community was introduced to the work of Hubert Godard. Since then, he has provided a stimulating perspective on movement for many of us.

With Hubert's help, I have translated this paper which describes some aspects of his approach. It was originally presented as part of a symposium at the Universite de Paris V - Rene Descartes, in 1987. Although it was written for an audience of dancers, I hope as a Rolfer, you will find the point of view of value nonetheless.

—Aline Newton
with the help of Ruth Bames



We will take the spine as the starting point, but "spine" in the largest sense, as an image that includes mechanics, relationship and symbolism. The function of the spine will be understood as the capacity to perceive and respond to two fields, two polarities—in a way, the spine will be understood as a movement.

First gravity, the perception of weight: Do we feel the weight of our body from the top down? This will allow us to be gravid, to "give birth" to a second, opposing direction, called anti-gravitational or lengthening or syntropic (as opposed to entropic): a kind of life force. This second, upward movement will always keep the memory of the one who gave it birth, just as the way we hold ourselves echoes the way that we have been held. This is the image of the Tao: human being suspended between earth and sky, in perpetual relation with one and the other.

The quality of perception and relationship with these two fields is our foundation; it creates our autonomy. In a close analogy, breathing plays between these two fields, inspiration and upward movement, expiration and movement down.

MOVEMENT TOWARDS THE EARTH, TOWARDS THE SKY

Difficulty with expiration will have the same physical manifestations as a limited relationship with weight, with movement towards the earth. Language reveals it in the double meaning of the word "expire." For a dancer, the relationship with the ground, to falling (gravid\ grave) will be a function of the ease of relationship with gravity and expiration. Navigating in a bipolar realm, we will expire, we will fall more easily, the more we are sure of the inspiration that will follow, that we will be able to rise, or even better, to have retained during this phase the presence of the upward movement, in other words, the integrity of the spine. Conversely, in jumping, balance will depend on the potential opening to the sky, while simultaneously retaining in the movement the possibility of return, the connection with the earth, so as not to repeat the experience of Icarus.

SELF, EARTH AND SKY

Confronting these two directions, we create a triangle, and like a sea-going vessel, we will locate ourselves by successive triangulations—triangles that are not without similarity to the first triangle that presides over the emergence of autonomy in the child. The quality, the richness, the clarity of gesture will be but a reflection of this first support system.

Before being supported by our legs, we are supported by our spine.

The study of phylogeny shows that the verticality of the spine in the seated position preceded the verticality of bipedalism by several million years. We were seated and vertical, then we walked on all fours, spine horizontal. Nijinski often said that he jumped more with his back than with his legs. Remember the quality of Margot Fonteyn's arabesque: her leg was low, and yet full of a movement whose transparency revealed the supremacy of the upward-downward harmony that traveled through her spine. These two movements form the dynamic foundation of the spine, of spinal function; they will guarantee its structural well-being. It is not an exaggeration of the lumbar curve that creates lordosis: it is the lack of one of the directions that weakens the organization of the spine. This suggests the importance of the articulations at either end of the skeletal axis: occiput\atlas\axis at one end, and sacrum\iliac at the other. (For this discussion, the iliac bones are considered part of the appendicular skeleton.)

EARTH AND SACRUM

In terms of sensing movement, it is extremely important to consider the sacroiliac as a joint so that when we are standing, the upward force of the leg towards the body's center of gravity does not hinder the sacrum's movement and direction toward the ground. It is not a matter of pushing the sacrum towards the ground, but of keeping a sense of weight here. Thus, when rolling the spine from the head while standing, the legs and the iliac bones act as scaffolding, and the return to vertical is cushioned by the sensation of the sacrum creating a counterweight. Were this not so, we would find ourselves upright with a lumbo-sacral compression we would then have to release. With repetition and muscle memory, hypertonus would ensue, structure taking over function.

Seated, the same movement is even more apparent. The ischial tuberosities substitute for the feet as the ascending support, the sacrum keeping its downward freedom. The Tai Chi masters considered the perception of weight in the limbs so important that an old story tells: if a bird landed on the hand of a master, he could prevent it from flying away simply by a tiny downward movement of his hand at the moment the bird prepared to take off.

Falling, the rooting of the sacrum, can only happen

with support from the opposite pole. The upward movement guarantees that the fall, the rooting, will not be a death, a burial, but the prelude to an ascension.

THE SKY AND THE OCCIPUT

The joints of the occiput-atlas-axis make up the most important point of this upward movement. Just as the work of the sacrum was to let go downward, here too the key is to allow a movement upward. The eutony of the myofascial network, especially in the vertical muscle chains, will give free access to the deep muscles (transversospinalis etc.) that are responsible for lengthening along the vertical line. These muscles engage as soon as there is a sensation of weight, provided that this sensation is not smothered by an accumulation of tension. As Roger Perrin has shown, just carrying a weight on the head will often suffice to wake up this central reaction.

Anatomically, the influence of one part of the ascending spinal muscles stops at C3, thus giving autonomy to the suboccipital muscles so that they can perform their primary balancing function. The cranium, through its underlying joints, is like a puppeteer. Electromyograms in the mentally ill show a considerable elevation in the electrical activity in the neck in particular, balance being affected in both its physical and mental aspects. For the cranium to perform its function, for it not to be bound by the powerful muscles that connect the head to the thorax, the upward movement must exist as a possibility, both symbolically and biomechanically. As with the sacrum, it is not a matter of stretching the neck towards the sky, but of allowing the movement, inhibiting the inhibition. The question will not be "How do I do it?," but, "What stops me?"

RELATIONSHIP TO LANGUAGE

The work of F.M. Alexander has shed a lot of light on this question. It is not coincidental that the troubadour of upward movement and of occipital freedom discovered his method as a result of vocal problems during his acting career.

'In fact, when the ascending vector of gravity's line does not find its free path across the yoke of the scapulae through to the occiput, it is because the individual carries himself by his arms and his shoulders, instead of his head. The head then becomes dependent on the shoulder girdle and its affective charge. If we agree with Didier Anzieu when he says that speech can only develop from overcoming the taboo against touching, the child's clinging to the mother—in other words, accepting that the scapula is autonomous in the exchange (deferring tactile touch for touch with words)—leads us to imagine the link between the freedom of the occiput, speech and the symbolic existence of this upward movement. The actor's fear of not reaching (touching) his audience may echo a much earlier fear. And so we return to the double movement earth-sky as the foundation of being—preceding all doing and giving it its first support.

We could then speak of a deep musculature of being giving meaning (direction) to a more external musculature of doing. Think of the dancer's stage presence, closely linked with the transparency, the clarity of this spine\person, and which action should never render opaque.

Along this two directional line of gravity, two points play the key role of center of movement for biomechanical exchanges of the human being with the external environment: the motor center for the arms just in front of the 4th dorsal vertebra, and the motor center for the legs on the body of the third lumbar. These structural centers play a part both functionally and symbolically.

THE CENTER FOR THE ARMS

The upper center, in front of T4, is also the center of gravity for the whole head-trunk-arms; it is the functional center of locomotor movement from the feet. When a child takes his first steps, when he lets go his grasp and reaches towards the arms outstretched to him, it is the beginning of the autonomy of the functional center of movement. This moment will have been prepared by a long period of spinal verticality in the seated position and the mastery of the 2 fundamental spinal movements. In the seated position, the use of the arms and hands will have prepared the mobility and neural information that will allow "going towards" on one's own. In this, ontogeny will follow the history of phylogenetic development.

THE CENTER OF THE LEGS

The second point, located on the body of L3 and organizing the legs is the center of gravity of the body as a whole. This will be the functional center during floor work, the elevation of the jump, in swimming. We could say that the legs are suspended from this point, particularly across the psoas muscles.



THE CENTRES IN SPACE

Along the axis of gravity, an upper motor center organizes the arms, enabled by the occipital articulation. A lower motor center organizes the legs and depends on the freedom of the sacrum. From a side-view, these two points are located at the apex of the two curves of the trunk. There, in ascending or descending movement along the spine, the tangent of the curvature changes direction in relation to the vertical. These are the key points in vertical movements, such as wave motion of the spine.

If one of the two points has been fixated, (for example when there is unresolved work with grasping), the person will carry her\himself from the shoulders:

- with an internal rotation if the point is fixated behind and shortened
- with an external rotation if the point is fixated in front of the line of gravity.

The same holds for the legs: the femoral rotation will depend on the position and freedom of the lower center with its gravitational axis. (thus the importance of this area for the "turn out" of the dancer.)

The experience of teaching dancers and musicians leads us to think of the upper center as linked with the energy of the father, and related to timing, to rhythm, and movement. The lower center will be analogically in resonance with the mother, and space, melody, pulsation- the reading coming not from the physical structure but from the functional complex in movement.

It is common to see certain dancers who have a facility for floorwork, a good sense of space, sensuality of gesture, but whose presence dissipates when they move through space: they lack a sense of rhythm and clarity of direction. Conversely, there is the opposite type, good rhythmically, defining space with clarity, but whose gestures are missing flesh, fluidity and sensuality. These two extremes bring us back physically to the inhibition of one or the other of the key centers which have been described. The fullest range of gesture will be evoked from the union of these two qualities.

INTERDEPENDENCE OF THE POLES

In any movement, it is always the complementary pole that supports the activity and expression of the moving pole. The soccer player prepares to kick with his arms and ribcage, giving both a direction and a support to the action of the legs. The javelin-thrower is the opposite: he will initiate his movement and prepare it by placing the motor center of the legs and pelvis forward to have both a directional and mechanical spring for the arm's action. The "rightness" and beauty of Ben Johnson's start during the Olympic 100m, and the time he picked up at this point in the race, clearly demonstrates the functional synergy he used. It is the power of the movement of the arms in the direction of the finish line that precedes the push-off from the starting block. Thus all the energy of the legs is transformed into a movement in the desired direction. When this is not the case, instead of being transformed into outward movement, part of the energy is wasted in creating internal compression, and can lead to pathology. This is what happens each time the use of one pole is not preceded by a directional activation of the opposite pole. This is one explanation for some of the arthritis of the hip so common in professional dancers. If the mobility and steadiness of direction of the scapular area are not constantly present to lighten the enormous effort demanded of the legs, the pelvic muscles are engaged in a contradictory exercise. How can one be "turned out," and thus activating the external rotators of the standing leg, when the act of raising the other leg means that one must use the abductors (which are in fact the internal rotators of the same supporting leg) to balance? In fact, a one-legged stance that is not organized and energized by the upper body will only be possible through the contraction of the femoral abductors, which we know are also internal rotators of this limb.

PUSHING OFF THE GROUND AND UPWARD MOVEMENT

Often in dance classes, push off (understood as the only way to rise) is not preceded by an upward movement. It is annihilated by the position imposed on the arms which stifles the ascending movement of the spine. Jumping is therefore felt only as a pushing off of the ground in order to get away, rather than as a desire to rise that is supported by the release of the legs. We are thus limited by the issues of the maternal kinesphere.

SPEECH AND THE DANCER

This constant pushing off the floor will often result in a closing of the medial arch of the foot, which is directly linked by the lingual chain to the buccal diameter, and thus diminishes the range of oral expression. The difficulties of voice work common in dancers is often due to a compression of the pelvi-lingual chain, more than to a respiratory incompatibility, as is the customary claim. It



may also be a compression of the psoas muscle which, by its neighboring attachment with the diaphragm's crura, impedes the free movement of the respiratory muscle. The two muscles share a fascial envelope: all excessive tension on one of the two muscles will thus be transmitted to the other.

A trance state can be induced by stimulating the psoas (beating the ground in 2\4 time as in some African tribal dance) or by the diaphragm (the 2/4 rhythmic breathing promoted by certain western therapies such as those of Stanislas Grof). Only man can modify the rhythm of his respiration voluntarily in walking: in most animals it is coupled with the rhythm of the legs.

ELBOWS AND KNEES

First we defined a central vertical line with its two tensors, sky and earth, as constituting the individual. This functional line has the spinal column as its structural metaphor , but the two should not be confused. The joints at either end, cranial and sacral, are the bases of the tensors of this line. Along the axis, we find 2 specific points, one organizing the arms, the other the legs. These two points exist in reality only when the central line functions well in both directions. The two points initiate movement of the limbs at their kinetic centers: elbows and knees. The relational function of the individual acts along the circuits between the elbows and their motor center on the central line, and from the knees to their motor center in the lumbar area. There must be a two-way movement: giving and receiving.

The arms are relatively independent with respect to gravity; they play the role of keeper of balance during movement. Their pendular motion reinforces the analogy of their link with time, just as the conductor keeps time for the body of the orchestra. Like the jaw, the arms hang, allowing these limbs their gathering function. At this level, limitation of exchanges will come from the shoulders that play the role of intersections that can ease or block the movement of the elbows towards the body's central line. These intersections also serve as the border between the inside and the outside. They will be dependent on the role that the border is made to play: boundary line or line of communication. Two categories of movement will be possible: going toward\ welcoming or taking\ pushing away. The history of the individual's relationship life and symbolic integrations will create the movement potential of these intersections.

The potential for two way movement at the elbow will have the same characteristics and limitations as those found in the diaphragm. (depending on whether during inspiration one takes the air or welcomes it, and whether during expiration one pushes it away or lets it out).

Bound energy in the elbow often has its correlate in the diaphragm, and often the diaphragm is freed by working on the elbow. In a port de bras, depending on the affect invoked by the motor center to the elbow, the myofascial chain will work in a concentric movement on that elbow (taking or to pushing away) or an eccentric motion (going towards, welcoming). The eccentric movement of the elbow leaves the wrist and shoulder open.

This is also the basis of touch in therapeutic manipulation: working with the patient, one must simultaneously listen and transmit. This kind of touch requires an open center of movement: one that itself combines an eccentric movement upward (neck free) and downward (weight in sacrum). Thus the therapist has a spine which is autonomous protecting him\her from merging in the work. Contact improvisation brings up the same issue: the quality of the expression always depends on the quality of the listening and reception (welcome). For a pianist, in a further example, the sensation of weight in the wrist (insuring quality and avoiding cramps) will depend on the motor weight center, which depends on the sacrum, i.e. on correct sitting.

For the legs and the knees, the process is the same as for the arms and the same functional notions apply for a *developpe* of the leg as for a *port de bras*.

DIRECTION AND SYMBOLIC ORGANIZATION

All this brings us to a problem of functional anatomy: how can the same muscle chain accomplish two gestures so different in nature? For example, a port au bras can have either a concentric flow, towards the elbow (to take, to push away) or an eccentric flow, coming from the elbow and going to the wrist and the shoulder (welcoming, going towards). These gestures will depend on the directions of what are called, in biomechanics, the semi-fixed points. It is on the existence of these directions that the encounter between the symbolic, the affective and the mechanical depends. The development of the individual in his physical, emotional and symbolic make-up will allow or hinder the existence of these directions of being which in turn create the biomechanical semi-fixed points. Symbolic organization also shapes structure.



AN EXAMPLE, QUADRATUS LUMBORUM

The quadratus lumborum connects the pelvis with the ribcage (12th rib) by attaching along the lumbar spine. If the movement upward is integrated (free occiput, no inhibition of the arms' motor center), the 12th rib becomes a semi-fixed point. At the same time if due to a blocked sacrum the direction downward is lacking or if the center of the legs is inhibited, any muscular contraction of the quadratus lumborum will cause the pelvis to tilt forward. There will be a hyperlordotic tendency in upward movement, which in a dancer means compensation for the tipped pelvis and loss of energy because of an overdeveloped rectus abdominis. The pendular movement of respiration will shift towards inhalation, and the relationship to gravity will be limited. The triangulation of the spatial self vis-'a-vis the two basic directions will not happen. On the other hand, if the iliac bone, rather than the 12th rib, acts as the semi-fixed point, there will be a downward movement of the sacrum, but not an upward movement. This produces a descending lordosis; respiration will shift towards exhalation. A third possibility is that bilateral contraction will cause a tendency towards a two-directional concentric lordosis.

Finally, when the upward and downward movements do both exist, the spinal column central and autonomous, the quadratus lumborum will be supported by an eccentric movement of the iliac bone and the rib. It will be able to function as an anti-lordosis muscle through its iliolumbar and lumbocostal fibers and thereby promote lengthening.

The rectus abdominis, freed from all tonic function, will work in phasic bursts when needed for movement.

THE "CONTRACTION"

The much talked about "contraction" movement in dance, is like drawing a bow string, the two ends maintaining the earth-sky directions. The release that follows will liberate the accumulated energy. The same muscles are used as in the lengthening movement. If the quadratus lumborum has limited function, the contraction can only be done with the rectus abdominis; there is no accumulation of potential energy, but rather a loss of kinetic energy. To return to the starting position will require a second contraction of the back extensors.

INHIBITION AND THE STRETCH REFLEX

The lack of foundational directions in the spinal column lowers the threshold of firing of the stretch reflex (the reflex of contraction when a muscle is stretched, in order to maintain balance), laying the foundation for the development of a functional inhibition. It is therefore essential that training focus sensory awareness on the sensation of the release of the antagonists, before triggering the agonist. This moves back the threshold of firing of the stretch reflex: no inhibition is left so that there is an absolute synergy of the acting muscular systems. The sensation of the antagonist allows us to look back over the history of our body's structure and to incorporate new information, creating thus a process opposed to entropy. This is also what is called inhibiting the inhibition. This work is based on the development of proprioceptors in the areas where they are inactive, by bringing attention during a movement to the sensation in the joints, myofascia and skin. Each style in dance or in individual character favors one or the other of these categories of proprioception and direction of effort.

As Zeami said in his XIVth century treatise on the Noh theater, the complete actor is the one who can combine the qualities of bone, flesh and skin. The same muscle connecting 2 bony points, A and B, can work in 4 completely different ways:

- A held (point semi-fixed, reference direction), will bring B towards it: i.e. unilateral contraction.
- B held pulls A
- A and B having no directional sense, they come towards each other in a bilateral contraction.
- A and B move away from each other (two directions) if the basal tonus of the muscle drops below its constant.