

# Rolf Movement®

## Faculty Perspectives

### *Body Security: The Movement Brain Asks "Where Am I?"*

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**A** truism in the political world is that all politics is local. In the world of psychological security, it is fair to say that all security is local. The topic of body security begins by asking you to consider your image of personal (local) security.

When you hear the word "security," what do *you* think of? A secure sense of family or relationship? Adequate employment? Money? Food? Shelter? Health? Youth? Beauty? All these aspects of security can, in fact, be part of one's security. These forms of security represent a hedge against failure at some point in the future.

To one degree or another, conventional forms of security dwell in the realm of time, which is part of our cognitive imagination. This is not to diminish their importance. But it opens the door to consider other dimensions of security, namely security that belongs to the realm of space as opposed to time. Space, or spatial location, is the foundation on which cognitive reasoning, and time and object recognition, depend. Remove our spatial security and the other forms of security are not of much use.<sup>1</sup>

Spatial security lies truly at the heart of body security, and body security is at the heart of structural integration. Body security is a foundational issue for structural integration. Security underlies availability to change. We resist change when we are afraid, no matter how alluring the promise of improvement. What offers the kind of security that helps bodies to consider new options?

Structural integration rests on the philosophy that body security depends on the fundamental question, "Where Am I?"

Where is my up? Where is my down? How does the differentiated space within and outside my body locate me and shape the sense of being here at this moment? Without location, our brain cannot meaningfully function. Without location, our body cannot choreograph movement and posture.

To answer the "where am I?" question, the body relies on the vestibular system because it acts like a carpenter's plumb bob (pendulum) to tell the body where "down" is; the body relies on stretch receptors, pressure receptors, and other mechanoreceptors throughout the body. These receptor organs tell the body about its sense of weight and its relative position in space. The body also listens for other types of sensory information, a sense of being touched by the world: on the skin, especially in hands and feet, through the eyes, ears, nose, and skin. The body assembles its underlying security from all these sources.

Our body security includes its sense of weight, volume, and body boundary, supplied by proprioceptors, interoceptors, and touch receptors. Eyes and ears offer the sense of the space around one, the shape of it, the size of it, the density of it – and all these senses answer the question "what is the shape of my body and my surrounding space?" The shape of the surrounding space is an extension of one's sense of body, whether we are conscious of it or not.

This form of orientation – orientation to location – speaks directly to subcortical processes of the brain, and it is called (in the neuroscience world) the "where" aspect of the brain. When the where aspect of the brain gets this information directly

and clearly, the "movement brain" (those parts of the body that regulate movement), functions well. We move, stand, and interact, efficiently and confidently. There is flow.

Compared to other mammals, a human being has a more complex cortical brain. The cortical brain produces a secondary impulse for security, and humans have developed this secondary impulse extensively. The cortical brain asks the question, "What is it?" (or "who is it?" or "when is it?"). This secondary question differentiates on the basis of object identification. Identification involves past history and introduces the element of learning over time. In order to answer the question "what is it?," the brain must use memory to match new objects with something remembered. The brain also looks to find names for objects. All the objects and names that populate our personal history are part of a narrative that lives in the imagination of time. We build a narrative of our life that lives in the "what" part of our brain. We imagine the future with the *what* part of our brain. This is part of being human. It serves us in important ways. It offers the capacity to find psychological security by sorting friend from foe, or by planning for the future. Sometimes, though, cortical activity inhibits movement.

Our movement brain idea includes the concept of the *where* (subcortical) aspect of our brain. The *what* aspect of the brain is both helpful and not helpful to movement brain function. In some instances, the *what* aspect of the brain can interrupt the movement brain.<sup>2</sup> Orientation to object identification, to personal narrative: all of these are forms of orientation that locate us temporally (in time), rather than spatially. Temporal orientation can, through habit, substitute for spatial orientation. One derives a sense of orientation from the story of one's life, or from one's calendar, or by naming one's familiar surroundings. Psychological security depends on a healthy narrative about personal history, but our movement can become less skillful to the degree to which our *what* function interrupts (dominates) *where* function in movement. For example, if we focus on an image of *how* we are supposed to move, or *when* we are supposed to move, this type of focus can limit the optimum flow of movement.

One way to observe the "where and what" model in action is to observe how a person

uses his/her eyes. We have two separate pathways that begin at the retina of the eye but separate at the primary visual cortex in the back of the brain. One pathway is for peripheral vision and the other is for focused vision.

*Peripheral vision is "where" vision.* It doesn't mean looking out of the corner of the eye, although peripheral vision has a broad field of view. It means the mode of sight in which the eyes connect to subcortical parts of the brain, to the *where* part of the brain. To see with peripheral vision means receptive vision and links to weight orientation. The experience is that the light and images come to you, land in you, and link to the feeling of weight/volume sense in your body.

*Focused vision* forms a separate pathway from peripheral vision. Focused vision focuses. It can be focused on objects, colors, or details that one is looking at, or a focused gaze can be a vacant stare in which one internally views a mental image, an image of the inside of one's body, or a body part, or an image of how one looks in a movement, and so on. Focused vision speaks to the cortical aspect of our brain, the *what* aspect of orientation.

We can use a peripheral gaze to "interrupt the interruption" that may occur from over-dominance of the focused gaze. That is, if cortical processes have compromised movement response, we can release this inhibition with a peripheral gaze. For example, if one's gaze is focused on a mental image of how to throw a ball, while actually making a throw, the focused gaze can be noticed by an observer. One will detect "muscular focus" in doing the movement as well. Inviting the ball thrower to sense space, not only with the eyes but with the whole body, may improve the person's coordination. In this example, movement inhibition associated with *what* use of eyes (focused) is interrupted by a *where* use of eyes (peripheral). *Where* orientation restores through a shift in the mode of gaze. When we "feed" the movement brain with *where* information, the body often shows improvement in motor control (coordination) – improved flow.

Peripheral gaze is quite specific in the types of information it gathers: light and dark, outline, movement, shape, size, depth perception, figure/ground separation. Peripheral gaze is fast because of its shorter pathways to the subcortical aspects of the brain. It is also color blind – peripheral

gaze sees the world in gray scale. Focused vision gathers information for object recognition, and sees detail with acuity. It is color-aware and is usually slower than peripheral because it is linked to the activity of cognition – making for more processing time in the brain.

(You can experiment to feel this shift in your own body. See if you can shift your attention between a mood of peripheral gaze and one of focused gaze. In addition to attending to the differences mentioned above, you may find peripheral gaze assisted by noticing a sense of weight in your body, or a sense of your volume or your skin boundary.)

People can use peripheral gaze and focused gaze simultaneously. This is actually our natural manner of function. In healthy movement and perceptive activity, the distinction between *where* and *what* outgrows its usefulness.

It helps to gain skill in using and feeling peripheral vision, and in feeling the shift to focused gaze, so it becomes a distinct and recognizable experience. We perceive the distinction in another when we know it in ourselves. Working on peripheral vision is a form of "body building." Skill at shifting to peripheral vision is assisted by changing the orientation in other sensory channels such as hearing and touch. With each sense we can practice finding the two gravity orientations of each sense: weight orientation for each sense and space orientation for each sense. (Practice with peripheral gaze also strengthens the capacity to maintain robust sensory awareness *while* the eyes remain open.)

A sense of feeling body location, feeling the present location, supported by a differentiation of the space within and without is our natural state. Posture and coordination are indicators of the relative level of security in sensing location, as a person's restored body security is an expression of structural integration.

In the simplicity of a body sensing its location, we may notice something else as well: an awareness of the present moment, a quality of relative quiet underlying the activities of life. Stillness manifests in the stability of orientation that isn't built on the sense of time; mind noise is our mental maneuvering around issues of security.

Orientation is relevant to movement because the body makes orientation to "where am I?" a priority. Our body

insists on locating itself because of a need for security at a biological level, below the level of story. If we support orientation with perceptive skills, the movement brain makes coordinative choices that are congruent with the goals of structural integration.

## Endnotes

1. At moments in which spatial location fails us – such as in transition from anesthesia, during episodes of labyrinthitis, or other neurological impairments that affect orientation – we realize directly our fundamental dependence on the basic sense of up and down to organize perception of body and world.
2. Working with thought processes is a necessary part of resolving movement issues. We must address psychological meaning as part of the movement process. In the experience of movement, however, perceptive skill involves abstaining from cortical control of the body. Orientation to "where" is a skill that helps to do this.

## Resources

For a discussion of posture and perception, and the idea of the "movement brain," see the articles, "Posture and Perception" and "Body as a Movement System" and other writings at [www.resourcesinmovement.com](http://www.resourcesinmovement.com).

For conceptual and graphic representations of *where* and *what* vision, see *Vision and Art: The Biology of Seeing*, by Margaret Livingstone, Ph.D. (New York: Harry N. Abrams, 2002.)

Jacques Pailliard proposed this model for many decades as a means of bridging the world of cognitive psychology and neuroscience; for his precisely reasoned analysis of *where* and *what* aspects of movement control, see the article "Sensorimotor versus representational framing of Body Space, A neural basis for a distinction between Body schema and Body image" in V. Knockaert and H. De Preester (eds.) *Body Image and Body Schema: Interdisciplinary Perspectives* (Amsterdam: John Benjamin, 2004).