Sense and Sensibility:  
Writings on Kinesthetic Potentials and Dance Education

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Introduction

The term kinesthetic learning enjoys a prominent yet oft broadly interpreted place in the lexicon for dance arts education. A look at promotional materials for dance workshops, course descriptions, somatic therapeutic approaches, and other venues for instruction illustrates the scope and breadth of the references to the kinesthetic as a focus and benefit of these experiences. Some argue for creative movement activities as the route to kinesthetic learning. Some suggest kinesthetic learning is about touch and seeing. Some affirm that kinesthetic learning is learning by “doing,” whatever that term may mean, associating movement experiences with emergent conceptual understandings in the education of young children (Stafford and Dunn, 1993). Much of what we see focuses on children. What are not common are systematic approaches to kinesthetically informed dance pedagogies for adults.

In contemporary literature, mechanoreception is described as sense reception activated by mechanical pressure (e.g., touch, massage) or action/distortion (e.g., muscle tension). Interoception is sensitivity to stimuli originating inside the body, physiologic systems of perception that involve movement, pain, temperature, touch, sense of time and in some a sense of direction. These systems are in consort with internal sensations of body image, body part placement, relation of body parts one to the other, gravity, and acceleration/deceleration. Body information sources weave together, inform and, in some circumstances, may contradict one another to constitute the sensory threads that combine to provide us with a kinesthetic sense. In these discourses, proprioception and kinesthesia are sometimes viewed as one and the same, in other sources, discreet differences are noted (medical-dictionary.thefreedictionary.com).

So, what is the history of inquiry into sense associated with mechanoreception? Aristotle is credited with classifying the five senses of sight, hearing, taste, touch, and smell. Today the scientific community accepts nine and sometimes eleven senses, including: thermoception

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(sense of heat and cold), nociception (sense of pain), equilibrium, proprioception (sense of balance and gravity), and kinesthesia/proprioception (sometimes categorized together as the sense of joint motion and acceleration) (Annisimov, 2008, n.p.).

The study of the body’s awareness of itself was first discussed in 1557 by the Italian scholar and physician Julius Caesar Scaliger (1484–1558) who commented on “the sense of locomotion” (Annisimov, n.p.). The study of the sense of one’s movement waited until 1826 for further examination when Charles Bell coined the idea of a “muscle sense,” a concept now considered the first articulation of a physiological feedback mechanism. Bell hypothesized a sensory information cycle with the brain sending commands to the body’s muscles and the muscles sending reports back to the brain. In 1887 Henry Charlton Bastian, the English physiologist and neurologist, proposed “kinesthesia” as the scientific term for muscle senses, as he suggested that reports being sent to the brain came from the muscles and body structures such as tendons, joints, and skin. Bastian’s ideas led German neurologist Alfred Goldscheider (to classify kinesthesia into three categories, (muscle, tendon, and articular) based on their pathways of afferent messaging (Lephart, n.d., n.p.). Bastian’s definition states:

We may much more reasonably and conveniently, in the face of all the disagreement about the ‘muscular sense,’ speak of a Sense of Movement,* as a separate endowment of a complex kind, whereby we are made acquainted with the position and movement of our limbs, whereby we judge of ‘weight’ and ‘resistance,’ and by means of which the Brain also derives much unconscious guidance in the performance of Movement generally, but especially those of the automatic type. Impressions of various kinds combine for this impression of the ‘sense of movement,’ and in part its cerebral seat of area coincides with that of the sense of Touch. There are included under it, as its several components, cutaneous impressions, impressions from muscle and other deep textures of the limbs (such as fascia, tendons and articular surfaces), all of which yield Conscious Impressions of various degrees of definiteness; and in addition there seems to be a highly important set of unfelt Impressions, which guide the motor activity of the Brain by automatically bringing it in relation with the different degrees of contraction that may be in a state of action.

Such impressions, in such groups, differ from all other sense endowments inasmuch as they are ‘results’ rather than ‘causes’ of Movement in the first instance; and are subsequently used only as guides for promoting the continuance of movement already begun. But in other cases the ideal revival of some such impressions will cooperate with certain sensorial or ‘volitional’ stimuli for the renewal of Movements that have been executed at some previous time. (Bastian 543–544)
The discovery of kinesthesia served as the precursor to the study of proprioception. While these terms are frequently used interchangeably, some researchers note differences in their meaning and in their bodily contexts. Kinesthesia places an emphasis on a behavioral skills awareness of the body's movements and motions and incorporates reflexive, patterned, habitual movements, skin sensations and touch. Proprioception focuses more on cognitive awareness of specific joints movements, balance, and feedback from specific muscles — bringing movement into conscious awareness. There is ongoing inquiry into untangling and delineating the essential characteristics of each of the two words.

For the purposes of our discussion today, let’s say — kinesthesia is the body’s sense of its own movement. And it is this ability that dance educators have sometimes referenced in devising systems for training students.

Margaret H’Doubler

A first example of reference to neuromuscular patterns, systems for neurotransmission and the physiology of action to inform dance education, may be found in the teaching methods of Margaret H’Doubler, who established the first academic major program in dance at the University of Wisconsin-Madison in 1926 (Hagood, 2000).

Unpacking H’Doubler’s methodology is never easy work. Her texts lay out her approach but rarely attribute its evolution or construction to the work of others. In her 1921 text, *A Manual of Dancing*, or in her 1925 *The Dance and Its Place in Education*, she does not include an index nor does she cite specific source information. An example of this is found in *The Dance and Its Place in Education*. Here, in discussing the importance of conscious awareness and attention to one’s movement and repetition in dance education, she writes:

> All this will mean unremitting attention and effort, but it is only in this way that the student will develop that sense of kinesthesia which is so essential to all effective use of the body. It has been defined by Blanton as a “consciousness of the amount or quickness of muscular exertion involved in the performance of a given act.” It is this which makes
possible that muscle memory that enables skill to reproduce intricate patterns of movement without conscious thought. (H'Doubler, p. 60)

So — who is Blanton? No one by that name is included in H'Doubler's bibliography. An internet search found neurologist Smiley Blanton and his wife Margaret Gray. Smiley was an early researcher in Speech Pathology and Mental Hygiene and taught at the University of Wisconsin from 1914–1924. Margaret Gray lectured at Wisconsin in child development and speech pathology 1922 and 1923. Both Blantons were at Wisconsin at the time H'Doubler was developing her text and her ideas for a dance curriculum. (The first dance major includes 10–14 credits in speech, equivalent with studies in English, Science, and Foreign Language) (Hagood, 2000, p. 335). In deconstructing H'Doubler's methodologies, we are often forced to come to conclusions based on incomplete information, our own logic, or even conflicting clues. She does not tell us, as other inventors might, from where her visions came. But, within the short paragraph we do find several of the chief tenets H'Doubler lays out in her text:

- Unremitting attention to what is being experienced and unremitting effort in refining experience,
- Conscious attention to body actions,
- Repetition to develop muscle memory, leading to
- Performance of intricate patterns of movement without conscious thought.

In chapter IV of *The Dance and its Place in Education*, titled “The Fundamentals of Movement,” H'Doubler outlines her approach to training bodies to move. She starts with movements of the spine and torso, then the shoulder girdle (as its functions are associated with corresponding accommodations, stabilizations, and limitations of the torso) and then to the legs (whose movements are affected by actions of the lumbar spine, and in turn affect the position of the pelvic girdle). Joint actions are experienced. Then, corresponding actions with other joints and body parts are noted, analyzed and experienced, until we are moving the entire body.

Coordinated movement experiences are also “fundamental”: a body roll from stomach to back and return to stomach, crawling forward and backward with and without use of the arms, and folding and unfolding the body from a beginning position on the knees and arms to complete extension of the spine and complete flexion of the humerus. While stylized from basic to advanced, these actions are the same movements babies transition through in the first year of life. H'Doubler's action sequences are developed for adults by engaging more muscle groups, increasing skills in coordination, and asking for greater ranges of motion. Does H'Doubler say
that her choice of movements are meant to bring the practitioner back to the fundamental movements and coordinations necessary for the basic organization of human movement? Not exactly. But if one looks at what is being recommended, H'Doubler's choices tap into, refine, and further develop fundamental body coordination.

Another fascinating aspect of H'Doubler's directions in leading students into and through fundamental movements experiences are the subtle clarifications she includes in providing her directions. For example, in her opening exercise, H'Doubler suggests:

**Sitting on the floor tailor fashion**— spine relaxed—head dropped forward. Gradually raise chest higher and higher, at the same time bringing head up and back as far as possible. Relax and repeat. Check the movement at different stages and discuss the relation of the resulting positions to good posture. This is a helpful way of starting beginning classes. The position is natural, so that they can easily experience movement in the spine without being too confused as to localization of parts. Explain how this position limits movement in the lower back. After the class is familiar with the action of the spine in this position, assume the following:

**On hands and knees**
The spine is now in a horizontal position, and all parts are free for complete movement. To avoid the tendency to bend elbows, turn hands out. Aim for complete flexion and extension of the whole spine. In practicing flexion and extension in this position, it is often helpful to suggest to the students that they are drawing an imaginary circle, in front with the chin. Repeat with hands turned in—permitting elbows to bend. Take with free motion in the hips and knees. This permits a wide and free movement.

**Standing on knees**
Same. After control in lumbar spine has been mastered, repeat with pelvic control. Relax anterior neck muscles. (1925, pp. 64-65)

How did H'Doubler know that in practicing flexion and extension of the spine while in a horizontal position (hands and knees), the elbow joint would flex if the humerus was not in an outwardly rotated position, or that anterior neck muscles would grip in flexion and extension of the spine while kneeling? She doesn’t say but the logical conclusion is that she carefully and sequentially attempted to discover, feel and notate the body’s responses to the actions of its parts on her own body, and noted the same experiences on other bodies. To me, this element of her work is most interesting from the perspective of teaching kinesthetically. Not only does she attend to the moving part, but she anticipates bodily responses.
to the moving part, choke points, actions that elicit muscle actions, and their impacts on sensation.

**Irmgard Bartenieff**

A contemporary practice in movement/dance education that is kinesthetically informed is the work developed by Irmgard Bartenieff (1900-1981), a student of Rudolf Laban in Germany in the 1920s. Titled Bartenieff Fundamentals, it is the basis of the body work in what is known as Laban Movement Analysis. Immigrating to the United States in 1936, Bartenieff found it difficult to earn a living as a dancer and within a few years changed careers. After receiving her certification in physical therapy from New York University, she spent the next 12 years rehabilitating polio patients. From 1959 to 1967 she served as a dance therapy research assistant in New York hospitals. This pioneering work led to her recognition as one of the founders in dance/movement therapy in this country.

Realizing that the movement principles she studied with Laban were applicable to rehabilitation, her work went beyond the repetitive use of exercises and incorporated the use of kinetic energy (Effort) and space. Her interest was in experiencing or re-experiencing movement patterns basic to all human beings. Although certain movement patterns are repeated to establish neuromuscular connections, Bartenieff Fundamentals is not a prescribed set of exercises. Rather it is, as Peggy Hackney defines it, “an approach to basic body training that deals with patterning connections in the body according to principles of efficient movement functioning within a context which encourages personal expression and full psychophysical involvement” (Hackney, 1998, p. 31).

There is a striking similarity in the principles underlying Margaret H'Doubler’s fundamental movement patterns mentioned above and those of Bartenieff. While H'Doubler’s sources are not given, it seems clear as described earlier that she is reiterating developmental and reflex movement patterning and, as she states, her movement patterns are “based on the natural movements of the human animal…the systematic application of the laws of the joint-muscle mechanism …and (are) exact fundamental coordinations” (1925, p. 43). Bartenieff, in an unpublished manuscript, “discussed how her work was based on a thorough understanding of the early patterns of neurological development, including the early reflexes, righting reactions, and equilibrium responses...” (in Hackney, 1998, p. 31). She described her Fundamentals work as a “re-education into body connection” (in Hackney, p. 8).
Some specifics further illustrate H'Doubler’s and Bartenieff’s parallel paths. In H'Doubler’s 1925 book is a sketch of a woman doing one of the basic movements, a body roll. From a position lying on the back with the arms open on a diagonal the hip initiates a roll and the body rotates sequentially to lying face down. The movement is then reversed. A body roll in Bartenieff fundamentals also starts from a back lying position with the legs also on the diagonal. Initiating the roll movement with the hand or foot the body rotationally sequences to a front lying position and reversed. Although there is some variation between the two rolls the purpose in both is experiencing how the lower body can sequence through to the upper body and vice versa—in Bartenieff terms, an example of diagonal connectivity. H'Doubler also has several examples of what she calls “folding and unfolding,” moving from flexion in the spine to extension. When performed in Bartenieff Fundamentals in a similar fashion they are illustrations of the head-tail connection.

While there is no evidence either of these women knew of the other, they both understood the foundational development of efficient, functional movement, identified simple to complex movement relationships to re-pattern the neuromuscular system, and inter-related these connections with the psychological and expressive aspects of the individual mover.

While H'Doubler’s approach to fundamental movement experiences continued and developed further under professors in the University of Wisconsin-Madison Women’s Physical Education Department and was available to students in dance and physical education into the 1970s, further development of Fundamentals course work ended in the late 1960s. Bartenieff’s work, however, has continued developing through what is now known as the Laban/Bartenieff Institute of Movement Studies which she founded in 1978 and has been refined and expanded by her many students and their students. Laban Movement Analysis including Bartenieff Fundamentals™ is now included in the dance and dance/movement therapy curricula in many institutions of higher learning, schools, and body therapy centers. Bartenieff Fundamentals is definitely a kinesthetically informed approach to discovering body connections in dance education.

Both of these movement educators used their knowledge of the science of the body to develop instructions that led students through the process of “discovery, analysis and synthesis” (H'Doubler, 1940, p. 90). The results were the experiencing and refining, examining, re-experiencing and re-refining fundamentals of bodily coordination’s AND complex bodily movement for the purposes of enhancing the individuals sense of her moving body in action and repose. It seems to us that much of what is currently labeled kinesthetic learning misses these points. If kinesthetic
learning is viewed as learning kinesthetically, perhaps the attention of dance educators would be better served attending to the fundamentals of discovering, sensing, performing, and recalling with accuracy and skill—consciously and unconsciously—movement that speaks to essential coordinations.

References


Biographical Information:

Thomas K. Hagood, Ph.D., is recognized for his writings on the history and policy for dance in higher education. Texts include A History of Dance in American Higher Education: Dance and the American University (2000), Margaret H'Doubler: The Legacy of America's Dance Education Pioneer (2006), and Legacy in Dance Education: Essays and Interview of © 2011 T. Hagood and M. Brennan   In Time Together: Viewing and Reviewing Contemporary Dance Practice 8
Values, Practices and People (2008). He is founding president of the National Dance Education Organization (NDEO) and recipient of the NDEO 2005 Visionary Award.

Mary Alice “Buff” Brennan, Ph.D., CMA, is Professor Emerita and former Chair of Dance, University of Wisconsin-Madison. Her research articles on creativity in dance and the movement analysis of dance style have appeared in numerous scholarly and dance publications. She was the 1985 National Dance Association Scholar and a 1989 and 1995 Fulbright Scholar to India. At the UW, she received a Vilas Associates Award, Virginia Horne-Henry Grants, and a School of Education Distinguished Achievement Award. Currently she is a Board Member on the Wisconsin Dance Council, and the Hancock Center for Dance/Movement Therapy.