Polycentrism in Contemporary Dance.
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Abstract: The concept of a single embodied center is an important part of modern dance training and aesthetics, and is particularly applicable to spinal movement. Polycentrism, a concept that has arisen though analysis of Africanist dance aesthetics, can also be identified in contemporary dance. Polycentric aspects of spinal connectivity are supported by somatic and biomechanical studies, and offer additional possibilities for movement aesthetics, efficiency, and health. How might our pedagogies, aesthetics, and worldview integrate polycentric approaches to spinal connectivity?
**Who is dancing?**

This essay aims to describe and interpret patterns of spinal connectivity in order to better understand possibilities for dance aesthetics and pedagogy. In support of a phenomenological methodology I will both describe movement patterns and also reference my own experiences embodying these patterns. Phenomenological hermeneutics supports interpretation of experience in a context that is neither entirely subjective nor objective in nature (McNamera 1999: 167). The phenomenological perspective enables me to elucidate the significance of my lived aesthetics, alongside their pedagogic applications. While the subjective nature of such reflections does not implicate universality, the corresponding movement patterning can be described and referenced objectively. My aesthetics and movement patterning are intimately related. The movements that I practice create me—my physical, psychological, and spiritual integrity are all affected by my movement practices. In turn, the movements I choose to practice reflect who and how I want to be. They arise from my studies of dance and somatics, and also from the needs I perceive my body to have. In short, movement carries meaning, and the movements I describe bear relation to the culture in which I am a participant.

I identify myself as a contemporary and post-modern dancer, choreographer, and educator. I come from a lineage of training that includes the techniques of Martha Graham, Lester Horton, José Limon, and Merce Cunningham. I have also studied Ballet, Laban Movement Analysis, Bartenieff Fundamentals, Feldenkrais, Yoga, West African dance, and other movement forms. Of equal importance in my training are many less codified contemporary techniques that reference the experiences of teachers and choreographers with whom I have worked. My studies of anatomy, kinesiology, and somatic theory serve me both in my dance work and as a practicing somatic educator. While my movement background provides me
with a unique bias, its diversity is not unusual for a contemporary movement artist. The tasks I face philosophically and kinesthetically are integrative: What patterns emerge through the aesthetic choices that I have both chosen and inherited? How do they inter-relate? How might specific patterns serve aesthetic potential or sustainable embodiment?

Spinal Connectivity Patterns and Aesthetics

I am fascinated by spinal connectivity. The individual segments of the spine integrate in a complex and relational system. My training supports spinal movement as a defining feature of modern/contemporary dance. In my own choreography spinal movements often relate the motions of the limbs, head, and pelvis through time and space. Connection to the ground through mobility in the legs and femoral joints sets up the spinal integrity that I value. My studies in Laban Movement Analysis and Bartenieff Fundamentals have helped me perceive stability to be a product of balanced mobility—the integration of mobile parts allows for stability that is connective and not static. Peggy Hackney writes that ‘Stabilizing and mobilizing elements interact continuously to produce effective movement.’ (Hackney 2002: 40) The spinal dance is one of counterweight. At one end of the spine is the head, a bony mass laden with sensitive organs of perception. At the other end is the pelvis, a strong bony construction through which force from the legs translates through the torso. The vertebrae of the spine relate the pelvis to the head and thorax in a constant balancing act of integrated mobility: When any one part moves, the whole is affected. The nature of spinal connectivity is change, whether that be the subtle movement required to balance in a simple standing position, or the more drastic movements often required when catapulting oneself through space. When a person stands erect and balanced, the ligaments of the spine provide no postural restriction; it is rather the job of the
muscles and nervous system to maintain stability through constant and dynamic adjustments (White and Panjabi: 1990). Adaptability is indicated. From this level of subtle balance to the dramatic full range movements available when dancing, there are many possibilities for how the spine changes shape, and for what shapes the spine might take at any particular moment in time.

Spinal movement is three-dimensional, and our anatomy does not require that all vertebrae articulate in the same direction at the same time. In the language of Laban Movement Analysis spinal patterning is particularly recognized through Head-Tail Connectivity, one of six Patterns of Total Body Connectivity named by Peggy Hackney. Stemming from the developmental movement work of Bonnie Bainbridge Cohen known as Body-Mind Centering, these patterns are fundamental to human movement, and they follow a developmental progression. ‘Each Fundamental Pattern of Total Body Connectivity represents a primary level of development and experience, and each is relational. Each organizes a way of relating to self and to the world’ (Hackney 2002: 13). Head-Tail patterning is developmentally one step more complex than Core-Distal patterning, which relates all parts of the body to the navel center. Where Core-Distal patterning relates all parts of the body to this single point of intent, Head-Tail patterning reveals a relationship in which body movements can be organized around multiple points. The head and pelvis are the two primary points around which this spinal connectivity organizes, and in an adult there are ultimately 24 points of spinal articulation (Hackney 2002: 102). Where Core-Distal Connectivity requires that these spinal parts move in the same trajectory in their relation to a single center, Head-Tail Connectivity provides a snake-like mobility that defies any singular directionality.

The spine connects and supports movements of the head, thorax, and pelvis, together constituting the axial skeleton. Many scholars of dance kinesiology and
somatics reference these multiple centers of weight, and the alignment of these centers in linear progression (Todd, 1972: 59 in Franklin 1996: 20; Olsen, 1998: 35). The motions of the arms directly connect through the thorax while motions of the legs motivate and support the pelvis. Motions of the eyes affect the head.

Try this: Step in one direction while reaching somewhere else with a hand, and look toward yet another location in space. Repeat the action with different limbs and directions.

Your spine integrates these motions in action. Like the ripples on a pond busy with life, spinal movement can connect disparate actions of the distal points through multi-dimensional motions. Our snake-like spines offer multifaceted articulation.

The ability to integrate different movements in multiple parts of the body at the same time has been described clearly in discourse on West African Dance. Kariamu Welsh Asante refers to such movements through the quality of ‘polycentrism,’ defined as ‘motion spending time’ (Welsh 2001: 146). Gottschild clarifies this Africanist aesthetic, particularly in opposition to ballet:

From the Africanist standpoint, movement may emanate from any part of the body, and two or more centers may operate simultaneously. Polycentrism diverges from the European academic aesthetic, where the ideal is to initiate movement from one locus: the noble, upper center of the aligned torso, well above the pelvis. (Gottschild 2001: 333)

Polycentric movements can connect disparate systems of movement rhythm, support, and initiation. One arm may circle the torso, affecting the thorax and head, while the hips and legs move in relation to a different pulse and center of support or initiation.

**Monocentrism and Simplicity**
In comparison to the polycentric movements of the West African aesthetic, Core-Distal movements that relate all parts of the body to a single point could be called monocentric. In order to better define the differences between monocentrism and polycentrism, some anatomical specificity is useful.

The human spine is capable of flexion, extension, lateral flexion, and rotation, and some translation. In my training as a dancer and bodyworker I have heard this description of kinesiologic possibility again and again. However, spinal motion is not fully defined in this model: With some exceptions, each vertebral joint can individually do each of these movements. As when reaching one direction while stepping in another and looking somewhere else, one part of the spine may be flexing and side bending while another part extends and rotates.

Try this: Flex forward and to one side through your lower spine while lifting your head up and turning it towards the other side. You might imagine protecting something you are carrying while looking to make sure nobody is coming to take it from you.

A number of combinations of movements are possible. So why might we tend to generalize spinal movements to the whole structure? In Dance Anatomy and Kinesiology, Clippinger supports the ability of different parts of the spine to move in different directions simultaneously, and also offers that ‘for purposes of simplicity, it is helpful to first learn movement of the spine as a whole’ (Clippinger 2008: 108). We are better able to make sense of the possibilities by limiting their number, applying our objective analysis to a simpler set of conditions. When we examine spinal movement from this simplified perspective, the resulting motions are monocentric and planar--the spine organizes around a single point in space, forming the shape of a C. In modern dance training this is commonly termed a C-curve. C-curves have been particularly important in modern dance training since being formalized in Merce Cunningham’s technique, and also show up clearly in
Martha Graham’s technique. To create this form I have been taught to stabilize my pelvis so that the base of my spine does not move while my spine articulates around a single central point. Figure 1 illustrates this phenomenon in flexion and extension. In my training I have often been reminded to relate this articulation to the center of weight in my abdomen. Cunningham technique makes use of the C-curve not only in the sagittal plane, which results in flexion and extension of the entire spine, but also in the coronal plane (or vertical plane in Laban Movement Analysis), creating lateral flexion through the entire spine. These motions are also combined to create C-curves that occur, for example, both front and side, or both back and side.

Try this: Stabilize your pelvis and create C-curves in different planes. Notice the sensation of these C-curve movements. When I do these I am acutely aware of muscular stretch and the clarity of my form, and yet outside of dancing I have trouble imagining a functional context—especially for the lateral curve.

These C-curves that combine motions of flexion, lateral flexion, and perhaps even rotation do engage three dimensional space in relation to the facing of the pelvis, but the articulation of the spine as a whole is still two dimensional. These shapes can essentially be presented as easily on paper as in space when drawn from an angle perpendicular to the plane in which the spine is moving.

This C-curve patterning is popular in many techniques of physical training—Pilates, Yoga, and even physical therapy all use the rhetoric of ‘core’ work. There are ‘core’ classes which aim to develop strength even to the point of being ‘hard
core.’ On a less aggressive note these classes are often intended to help the student be ‘centered.’ Indeed, Core-Distal patterning is fundamental and important connectivity. Yet, in my experience training as a modern dancer, the C-curve has also come to represent something far less tangible than a visual aesthetic: it has become a model for training a ‘healthy’ spine. It is not surprising to me that our aesthetics, rhetoric, and sense of health overlap, and so enters my own critical spine: What is excluded by the prominence of the C-curve? What liabilities come with a monocentric bill of health? Have we systematically avoided other possibilities, and if so, why?

**A Healthy Spine**

Health is a valuative and relational concept: We often talk about health as being good or bad at any moment in time. Unpacking the concept of health is an interpretive process, and as such, it is difficult to claim universality: What one person defines as healthy may to another, seem unhealthy. My definition of health, developed from my own embodied experience, seeks ideal function, connectivity, sustainability, and ease. My healthy spine should function in all structurally possible ways through a lifetime of motion while minimizing pain. If the function of a spine is to connect motions of the limbs and torso, then examining all of the ways in which this can happen might yield a method for evaluating the health of any spine so long as my definition represents the evaluative criteria.

Somatic pioneer Thomas Hanna defined ‘sensory-motor amnesia,’ as a ‘habituated state of forgetfulness,’ in which ‘repeatedly triggered reflexes… create habitual muscular contractions, which we cannot—voluntarily—relax.’ (Hanna 1988: xii-xiii) The phenomenon of sensory-motor amnesia is Hanna’s description for *how* the effects of aging tend to restrict motion and create painful dysfunction. In his writing Hanna describes how his somatic education methods, stemming from
the techniques and theories of Moshe Feldenkrais, have had reasonable success in reversing the effects of sensory-motor amnesia. Practice is implicated for the sustainment of function over time in somatic methodology:

If certain actions are no longer part of our behavioral inventory, our brain crosses them off. In a word, it forgets. The practical, everyday awareness of how these actions feel and how they are performed fades away, and [sensory-motor amnesia] is the result. (Hanna 1988: 40)

Practice maintains such a behavioral inventory, whether that practice is consciously chosen or simply a part of daily movement action. The practice of monocentric spinal connectivity through C-curves maintains a particular aspect of spinal health. Yet, because these motions generalize the possibilities for spinal movement into a singular organization, their exclusive practice could come at the cost of sensory-motor amnesia. Because our spines are capable of polycentric movements in three dimensions, such movements are implicated as an additional practice for spinal health.

**Cultural Aesthetics**

As a dance artist I am drawn to uncover connections between our physical movements and our belief systems. The distinction between polycentric and monocentric movement patterning is similar to the distinction in music between single-meter and poly-meter. Musicologist John Chernoff suggests that ‘in African music there are always at least two rhythms going on,’ (Chernoff 1979: 42) and that ‘in contrast to Western music, African music cannot be notated without assigning different meters to the different instruments of an ensemble.’ (Chernoff: 45) The aesthetic coherence between dance and music suggests that the significance of these differences is both holistic and culturally specific. I perceive monocentrism to be ‘core’ (pun intended) to much of the more traditional modern
dance training that I have received, and as my pun implies, monocentrism is also an important part of how my American culture has perceived the world. Generalizing the connective possibilities of spinal movements through a monocentric model makes it easier to make sense of the movements, tracking relationships. Similarly, I ask my university students to have clear central theses when writing so that they and I can easily track how their ideas connect. Through training in Western modern dance I have learned to organize my body around my center of weight, a point lower in the body than Gottschild references for the ballet aesthetic. A polycentric approach is distinct from either single center—no single point of initiation or support can be consistently identified. With more variables in motion, polycentric movement is more difficult to consciously track.

Outside of Welsh-Asante’s work with Africanist dance aesthetics, definitions for polycentrism refer to discourses in political and social structure. A first definition in the Oxford English Dictionary places polycentrism ‘In communist political theory,’ with ‘the belief or doctrine that each separate communist party has the right to full national autonomy and that the Soviet model need not be binding for all communist parties.’ The second definition is more generalized ‘a situation involving several important elements or powerful parties; a system or theory having or proposing many centres or focal points’ (oed.com 2013). Use of the term for spinal connectivity implicates spatial significance for the movement of vertebrae in time, yet is not exclusive of other interpretations. Welsh connects African culture to the polycentric aesthetic: ‘The representation of the cosmos in the body is a goal. The myriad possibilities in the universe also exist in the body for the African dancer’ (Welsh 2001: 146). In my own dancing and choreography I connect polycentric movements to a belief that there is no singular reality or truth. Musically, Chernoff suggests ‘There is a clear parallel, certainly, between the aesthetic conception of multiple rhythms in music and the religious conception
of multiple forces in the world’ (Chernoff: 156). Perhaps singularity, such as a
central government, singular spiritual being, or a singular center for movement,
brings stability through its clarity. I assemble myself with monocentric
movements and imagery, noting the clear relationship of my body parts to my
center point. I have the ability to track the relationships of body parts or musical
rhythms organized around a single center in space or time. I find it quite complex,
if not completely impossible, to track every part of a polycentric movement as I
dance. I can gather information from one part of my body at a time, but there is no
single source of organization. Investigating polycentric movement has been
somewhat destabilizing for me: I must continually learn to trust my movement
viscerally, allowing myself to follow the complex patterns without complete
conscious control. Identifying with Welsh’s commentary on Africanist
polycentrism, I can perceive the experience of my body’s movement but cannot
fully understand its infinite possibility.

While the etymology of polycentrism arises from the study of Africanist
dance forms, the concept of polycentrism is simply descriptive. A movement need
not have Africanist origins to be polycentric. Cultural associations and
interpretations bear relevance to the investigation of polycentric movement, yet do
not necessarily implicate origin, causality, or appropriation. After repeated
practice and analysis of movements I have experienced in diverse cultural contexts,
I can describe some basic polycentric patterns in their biomechanical reality.

**Polycentric Kinesiology**

The possibilities for spinal movements are most objectively presented with
some reference to biomechanics and developmental progression. The range of
motion between different spinal segments is structurally regulated; specifically by
differences in the shapes of the vertebrae, their articulations with adjoining
structures, and also their ligamentous connections (White and Panjabi 1990: 3). The ribs add an important stabilizing element to the spine, particularly limiting extension in the thoracic spine (White and Panjabi: 59). The sacrum is similarly stable, articulating with the pelvis through limited motion at the sacro-iliac joints, and consisting of fused vertebrae. It follows that the kyphotic, forward curve of the sacral and thoracic vertebrae are structurally assured through the shape of the vertebrae themselves, while the opposite lordotic curves of the lower back’s lumbar vertebrae and neck’s cervical vertebrae are formed by the more plastic intervertebral discs (White and Panjabi: 3). This anatomy supports the concept of primary and secondary curves: The primary kyphotic curves of the thoracic and sacral vertebrae are formed structurally, while the lordotic secondary curves of the cervical and lumbar vertebrae are formed through movement patterning that leads the baby to vertical standing alignment (Gracovetsky, 1988: 314; Franklin, 1996: 188; Clippinger, 2007; 81). These areas of varied stability and curvature indicate that we do not move exactly as a snake might in our own Head-Tail patterning; we have our own specific possibilities for multidirectional movements. These particular aspects of stability and mobility assist us to maintain upright posture.

The resting state of the spine in respect to the sagittal plane (which includes the directions forward, back, up, and down) is like a sine wave or S-shaped curve. Each of the convex, lordotic spinal curves touches at its apex the imaginary vertical plumb line of the body through which the weight of the head can efficiently stack over the pelvis and feet (Olsen: 50). This linear progression of reciprocal curvatures means that even the smallest of spinal movements should have a polycentric aspect if balance is to be maintained with minimal effort—when one part of the spine moves in one direction, another part will move in a different direction. Referencing the spine as an S-curve, I picture myself as a walking
collection of waveforms. And, as the ability to create a C-curve suggests, we are able to change the form of the waves that our spines embody.

The S-Curve as conceived above sets up a planar, two-dimensional context for polycentric movement. In order to maintain a coherent simplicity for description and comprehension, maintaining dimensionality in the sagittal plane serves a purpose for this article. Yet, it is important to remember that living spinal movement is three-dimensional. In The Spinal Engine (1988), Serge Gracovetsky provides mathematical modeling and anatomic support for the importance of the spinal curvatures in movement. He suggests lateral bending, stretching of the ligaments, and locking of the vertebral joints as initial and involuntary responses to compression in the spine that generate twisting forces at the pelvis through coupled motion (Gracovetsky: 308). ‘Two or more individual motions are said to be coupled (e.g., lateral bending and axial rotation or anterior translation with flexion) when one motion is always accompanied by another motion’ (White and Panjabi: 53). The shapes of the individual vertebrae and their supporting ligaments provide these coupled motions. This model of analysis is inherently polycentric and three-dimensional as coupling of spinal movements translates compressive force into sagittal, lateral, and rotary movements in different parts of the spine at the same time. Gracovetsky’s spinal engine model supports a hypothesis that polycentric movement in the spine is essential to efficient connectivity in human movement.

I have come across S-curve patterning in somatic techniques such as Bartenieff Fundamentals, Feldenkrais, East-West Somatics, and also in some Yoga teachings, particularly within Iyengar and Anusara traditions. The heel rock seen both in Bartenieff Fundamentals and also in Feldenkrais moves the S-curve: The flexing and extending of the ankle joints while lying supine is used to roll both the pelvis and head on the floor. So long as the heels are not allowed to slide on the
floor, this action sends force through the body’s length. As the movement travels through the skeleton, the pelvis and head both maintain contact with the floor. In order for the force to pass through the spine, head and pelvis must both roll in the same direction. Figure 2 shows this intent along with the spinal S-curves. This movement is polycentric as both head and pelvis roll around their own centers and not a single common point. Sondra Fraleigh utilizes a similar motion that she terms ‘sea horse wave’ in her Land to Water Yoga, suggesting that the act of breathing can create these motions in the spine without any conscious intent at all. She not only suggests that these motions occur naturally, but also presents the idea that the motion itself is wave-like in its action (Fraleigh 2009: 73). This view is also part of the Bartenieff work, in which the heel rock is often presented alongside an image of water flowing from one part of the body to another. In both of these instances the use of the S-curve pattern supports a connective and integral view of the body where no one specific point of focus is emphasized.

Try this: Lay on the floor and play with this polycentric use of Head-Tail connectivity. Can you feel the ability of your head and pelvis to roll the same direction? Can you feel how one part of your body affects another in this fashion? Now take this information up to a standing position. Turn figure 2 such that the figures appear to be standing. Can you find these movements in your own body while vertical? Keep your head over your pelvis, over your feet, and bend your knees for easy motion of the pelvis.

I propose that S-curves and C-curves represent two fundamental possibilities within Head-Tail Connectivity. In most movements one will dominate as the
primary pattern, and at all times both are present in some way. Even when bent in an extreme C-curve the natural S-shaped curvatures of the spine will still underlie the shape. While less obvious, I also experience this convergence when standing erect. While the S-curve is more apparent, I am constantly adjusting back and forth from one slight C-curve to another. These curves are present in any one moment as spinal shapes that can be observed—an S, C, or combination of the two. In motion these curves integrate in dynamic relationship. A movement can phrase from being polycentric to monocentric and vice-versa, forming S-curve and C-curve shapes over time.

Compression of the spine provides an example where polycentric and monocentric integration is a useful model. Gracovetsky speaks to the importance of compression, periodically shorting the spine, for the efficient locomotion provided by vertebral coupling (Gracovetsky: 308). In dance, the significance of S-curve in the spine relates to the concept of a plié in the legs. In a plié the length of the dancer’s body is shortened through proportionate use of the hip, knee, and ankle joints in order to absorb shock, load the ligaments, strengthen and stretch muscles, and prepare to push again into length. My Laban training teaches me that this is a ‘yield,’ a necessary precursor to the push that takes me into space, or the reach that engages my relationship to space more fully. The ability to lengthen and shorten the body through plié is essential in propelling the dancer. Yet, in traditional descriptions I have encountered for the practice of ballet technique, length in the spine is dictated at all times, diminishing spinal curvatures. In her book Inside ballet technique: Separating fact from fiction in the ballet class, Valerie Grieg suggests that ‘The diminished curves make for a stronger spine, as it is in the transition areas, where one curve flows into the next, that the spine is most vulnerable to injury’ (Grieg 1994: 17). I do not doubt the importance of spinal
lengthening, but I do wonder at the lack of a yielding component. Ballet is not a static form, and ballet pedagogy increasingly includes softer views of spinal dynamics. In his book *Ballet Pedagogy* Rory Foster supports a generally lengthened spine, but writes that ‘it is important to maintain enough degree of curves in the spine so that the shock of landing in a jump is absorbed there and not transferred to vulnerable joins such as the ankles, knees, and hips.’ (Foster 2010: 64) This absorption of shock within the spine itself requires a compressive yielding.

In modern dance the yield is often a focus. One of the foundational principles of ‘release’ techniques as I have experienced them is that we phrase our movement efforts between action and relaxation of the musculature, using the least amount of muscle effort required for a movement task. Moving in and out of C-curves can be a part of this phrasing: In classes based on José Limon’s technique, I have used the rebound of a C-curve to return to vertical stability. In learning these movements I have been consistently reminded to lengthen my spine at the top and bottom of the motion. S-curves, and the polycentric connectivity they evidence, offer a way to phrase yield and push patterning in the spine that embraces a dynamic shortening-lengthening relationship. I can layer the C-curve action of the Limon rebound on the S-curve of my resting spine so that my verticality arises from a dynamic relationship between the motions of my head, thorax, pelvis, and feet, and not a positional prescription. Allowing these points to release towards each other allows me to reinvest in the action of lengthening between them. Just as a plié in the legs generates mobility through the potential to lengthen in any direction, plié in the spine through subtle use of the s-curvatures can also generate potential to set the body in motion. While this spinal plié may integrate with plié in the legs, it can also function independently, such as in a seated position.
Try this: Allow your spine to lengthen and shorten while seated. Can you do this through S-curves? When I use the S-curves to create spinal plié I feel like an accordion—my entire volume shifts slightly. The action is subtle, as is my accompanying sensation. I find that my breath is the most potent way to affect this change.

**Historic and contemporary aesthetic implications**

An S-curve emphasis has shown itself before in modern dance. Martha Graham introduced the S-curve in her technical foundations. In a Graham ‘contraction,’ the lumbar curve moves in opposition to its resting lordosis, following instead the kyphotic curve of the sacral and thoracic spine. The pelvis rocks back into a slight posterior tilt. Meanwhile the face lifts, while the head remains directly over the pelvis in space. As a result of these simultaneous actions, the cervical spine must slightly increase its natural lordotic curve. Viewing this position from the side an S shape is seen from head to pelvis. In Graham’s sequences this contraction sequences into a C-curve when the head drops forward in the sagittal plane. In the forward C-curve both the cervical and lumbar spine reverse their resting lordosis. As the contraction is released, the pelvis returns to neutral, and the rest of the spine accommodates in a wave-like motion. While the reversal of the lumbar lordosis is perhaps the most prominent spinal aspect of Graham technique training, I find the wave action of the spine as it shifts between the S and C-curves most intriguing, and most relevant to polycentric spinal connectivity. The flow from one shape to another suggests the yield and push of the spinal plié, and affirms for me the dynamism between S-curves and C-curves.

While Graham’s use of the S-curve rolls the top of the pelvis backward into a posterior tilt, it is also possible to maintain an S-curve with the top of the pelvis and head tilting forward. In this movement the lordotic resting state of the lumbar
is exaggerated while the cervical spine lessens its lordotic curve. The kyphotic emphasis of the thoracic curve is reduced to follow the lumbar lordosis. Again, the weight of the head remains balanced directly over the pelvis as the spine forms an S in the sagittal plane. I have yet to find any historically codified modern dance technique in which the S-curve is utilized with this exaggerated lumbar lordosis. When I do this motion in my own body I am again reminded of my experiences with African dance, and also drawn to emergent contemporary forms. I have utilized this patterning when dancing the Ghanaian dance *Kpanlogo* as choreographed by Okaidja Afroso, when dancing or teaching my own choreography, and also in the classes of teachers at the American Dance Festival and in the University of Utah Department of Modern Dance.

In contrast to the spinal plié, the S-curve can also be utilized as a stabilizing pattern in which movement is restricted. In Lester Horton’s technique the S-curve is utilized but termed a ‘flat back.’ While the terminology suggests a monocentric and linear relationship, I find the movements interesting to consider from a polycentric viewpoint. A Horton ‘flat back,’ results from a lack of change in the vertical S-curve relationships of the spine when the entire spine is taken as a unit off of its vertical axis. In order to maintain this shape the muscular patterning must dynamically shift with gravity so that the bony relationships between the head, thorax, and pelvis remain the same. The ability to stabilize between head and tail while changing their relationship to gravity requires awareness of how both parts move, and suggests a polycentric ability. Had the pelvis not moved then a C-curve would have resulted from the movement of the head, with a monocentric bias. The Horton example speaks to another way that monocentric and polycentric patterns alternate and integrate: When either head or tail moves in relationship to the
other’s stabilization then a monocentric C-curve pattern is leading, and when both move simultaneously a polycentric S-curve pattern is primary.

**Returning to self**

I am three-dimensional, as is my spine. The S-curves described above are in this sense incomplete. A three dimensional S-curve can be created in the spine by adding vertical and horizontal components. By this token, scoliosis is the occurrence of a lateral S-curve at rest. The three dimensional nature of our spines brings additional complexity to movement analysis.

*Try this:* Bend one knee to tilt and slightly rotate your pelvis. Tilt your head to the same side, and open your ribs in that same direction. Your head should remain stacked and tilted directly over your tilted pelvis, directly over both feet. The coupled motions in your spine should generate some rotation. For additional rotary action the arm opposing the bent knee can reach slightly forward and across the body while the arm on the side of the body that tilts down reaches slightly behind and across the body. Now can you shift this shape to the other side?

As you likely perceive, it is difficult to describe and learn such a shape through textual instruction. Furthermore, we don’t exist as static shapes, but rather in dynamic movement. Polycentric connectivity is exponentially more complex to track and describe than monocentric movements. For this reason, two-dimensional explorations of S-curves are an important beginning point for polycentric description and pedagogy, especially in the form of discursive prose. Yet in my classes, my choreography, and my own movement, I find three-dimensional polycentric connectivity most useful and easeful. Advanced modeling such as Gracovetsky’s also supports that such motions are most likely to appear in everyday actions such as walking.

I seek an aesthetic intentionally and progressively modeled from the integration of monocentric and polycentric connectivity. I am not alone in my
quest; I am collecting and connecting aesthetics and vocabularies already in motion. Steve Paxton, a founder and teacher of contact improvisation, presents two key floor exercises on his DVD, *Material for the Spine* (2008). His ‘crescent roll,’ is a monocentric c-curve that rolls while maintaining the reach of its end points toward one direction in space. His ‘helix roll,’ is similar to the three-dimensional s-curve that I practice, engaging wave relationships through multiple skeletal landmarks. While I have never studied with Paxton directly, my own development as a dancer and educator has surely been derived indirectly from his teachings, just as Welsh-Asante’s concept of polycentrism has entered my analytic vocabulary through her writing. I see polycentric movements in the works of my favorite choreographers. John Jasperse explores successive movements in which initiations travel as waves through the dancers. Steve Koester’s dances often include sequential initiations of planar movements that collide within the form. Doug Elkins’ choreography explores the vernacular of street dance on the contemporary stage, often bringing polycentric movements along for the ride. I have studied with each of these artists, and appreciate polycentrism as a binding element in otherwise varied work.

I believe it is important to include polycentric patterning in contemporary movement education. The structures of our culture are increasingly polycentric. The internet, now a key element of how we communicate, has no single center of operation or control. Computers connect to each other through multiple pathways, supporting information centers such as Facebook, Twitter, Craigslist, and Wikipedia. Similarly, multinational corporations selectively connect economies, ecosystems, and cultures between otherwise independent countries. Our body knowledge can reflect these newly differentiated and integrated entities. While S-curves and C-curves represent individual options in spinal connectivity, the most
important aspect of a polycentric approach is that different parts of the spine have individual curvatures and that these curvatures can relate in different ways. In my classes I often bring attention to acknowledging individual curvatures of the spine as they relate to full body movements. A cambre back in ballet serves as a clear example in my body: simply acknowledging that there is a natural concavity to the spine in the thoracic region relieves tension in my chest when combined with the knowledge that both the lumbar and cervical aspects of my spine are convex in nature. When I acknowledge these curvatures I don’t expect my thoracic curve to equal the range found in my lumbar and cervical, and my inner imagery more accurately represents the functional kinesiology. If, however, I work from a C-curve image in which all parts are treated equally, then I have a tendency to push through the thoracic spine to try to achieve a shape that it cannot take, losing my balance in the attempt.

In my physical practices and pedagogy I like to start by alternating between monocentric and polycentric patterns while supported on the floor, building gradually to a more vertical positioning. I allow my base of support to follow my spine, experimenting with moments of being on and off my balance. When I fluidly integrate my multiple centers of movement, I feel that my dancing is generated with less effort. I fall through space, strumming gravity with alternating, overlapping, and simultaneous initiations of my weight from different parts of my body.

Our dances embody our values as our aesthetics take shape in the living phenomena of movement. A polycentric spinal approach to dance training questions monocentric notions of ‘core’ as a single point of reference. What is it that we are looking for when we seek our own centers? Arising from an academic analysis of Africanist dance aesthetics, the concept of polycentrism assists
definition and interpretation of the shifts taking place within our own Western culture and aesthetics. Training the ability to integrate multiple processes simultaneously in my spine affects how I identify the deepest parts of myself: Who am I if not defined by a singularity? My aesthetic is relational—and this is its spine.

References


