Harmony in Space: A Perspective on the Work of Rudolf Laban

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To establish a systematic approach to human movement in all of its manifestations is a daunting task, one at which few thinkers have been successful. Such disparate fields as physical education, dance, theater, anthropology, biology, kinesiology, physical therapy, zoology, and psychology are all concerned with aspects of human movement; yet a vocabulary, notation, and body of theory that can be widely applied and adapted to satisfy the needs of all of these fields has not been available until recently. Even within any one of the fields mentioned above, approaches to movement have so changed over the years that theories that served well in one period became inapplicable as new developments occurred. I am thinking here particularly of the field of dance, where such visionaries as Pierre Beauchamp (1636-c. 1705), Jean-Georges Noverre (1727-1810), and François Delsarte (1811-1871) developed and articulated highly influential and brilliant solutions to the systematization of human movement, yet their work proved inapplicable to changing styles.

As a dancer, teacher, and dance historian, I have long brooded over the lack of unity within even my own discipline. I can never be certain that the language I choose to use in class with my college students bears much resemblance to what they might have heard at home from their local dance teacher, or that those who come from a sports or theater background can translate their movement experiences into dance terms. At professional meetings, dancers and teachers from different national or stylistic backgrounds are often at a loss fully to comprehend one another's work. Can I then expect to speak the same language about my movement as do those who come from other fields, but with similar concerns? It was my role as a teacher that motivated me to seek some solutions to this problem. From earlier brief exposures to the work of Rudolf Laban, I suspected that the system

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that evolved from his theories might offer a means of going beyond the scattered state of theory and vocabulary in dance and dance education, that it might indeed provide the "unified field theory" of movement for which I had long felt a need. Because I recognized that Laban and his followers had as a goal the development of a non-style-based approach to movement, I felt that this material offered the best possibility of achieving a common system and language. I decided to pursue this study further, a decision that has proven rewarding and enlightening. This article will explore one avenue of Laban's investigation: the area he termed "space harmony." I have chosen this theme in Laban's work because, as discussion will demonstrate, it was the crucible from which many other parts of his theory were forged.

A more recent visionary than the thinkers mentioned above, Rudolf Laban (1879-1958) drew on some insights and methodologies of these predecessors but went much further with his own experiments and theories. The result of his efforts was the development of a schema that proves useful in approaching *all* movement, both in the wide range of fields listed earlier and in the varied styles of any period. Laban was born in Hungary, the son of a high-ranking military officer. He travelled widely, tried and rejected the military as a career, and undertook formal training in art and architecture.[1] He became an early-twentieth-century "renaissance" man, with an active interest in all areas of learning, especially in philosophy and the various arts, including dance and music. By his early thirties, Laban had decided to devote his life to the understanding of dance and movement. In addition to working as a teacher, director, choreographer, and consultant, Laban wrote prolifically about his evolving theories of movement, which have been collected into a system now widely known as Laban Movement Analysis (LMA).[2] Among his earliest concerns was the development of a form of dance notation that evolved into Labanotation, one of the major systems used internationally today for writing movement. He also devoted considerable energy to devising a fresh approach to movement training, not only for the professional dancer, but for the layman as well, for Laban was deeply interested in the role of movement in healthy, effective human functioning. These concerns came together in the evolution of his theories of human motion through space, which he eventually systematized in his book *Choreutics*, written in 1939.[3] In the preface to this text, Laban defines "choreutics" as "the practical study of the various forms of (more or less) harmonised movement" (p. viii). In this book, Laban explains that the human body is oriented in space through dimensions, planes, and geometric forms through which established "traceforms" of movement can be identified. He codified these movement pathways into a series of movement "scales," the entire sequence of which allows full three-dimensional reach and motion around and through the body's core. Just as the scales in music

cover tones at fixed intervals from one another, to be practiced and played with a conventional series of fingerings, movement scales cover points in space at fixed distances from the body's core and from one another, to be practiced and performed in a conventional—though creatively interpretable—pattern of movements and dynamics. Laban articulated a series of "facts of space-movement" that serve as the fundamental tenets of his theory of space harmony. His approach to this vast area of investigation—human motion in and through space—was, I believe, powerfully influenced by his earlier training and studies. Indeed, I believe that Laban's decision to use the term "harmony" in identifying his ideas about space was in part due to the confluence of his knowledge of architecture and music.

It has been suggested that LMA has done for the field of movement what music theory has done for the field of music[4]—that is, it has provided a systematic structure for pedagogy, analysis, and composition. Indeed, LMA can be applied to the entire field of movement, not only to its art form—dance. Perhaps the analogy with acoustics as embracing the study of all sound, rather than with music, is more appropriate to LMA in its embrace of all movement. Yet I think that in the analogy of LMA to music theory some useful relationships can be found between the applications of the word "harmony" in each of these two areas. In music, harmony is specifically defined as the "simultaneous sounding (i.e., combination) of notes, giving what is known as vertical music, contrasted with horizontal music."[5] Initially, this idea of the verticality of musical harmony might cause one to question whether Laban's use of the word "harmony" in regard to movement in space was really parallel to the musical use of that word, for spatial pathways and scales move from point to point successively over time, thus seeming closer to the concept of "horizontal music" than to that of "vertical music." Why, then, did Laban choose to use the word "harmony" in association with his concepts of human motion through space? Perhaps, one might think, Laban just liked the sound of the phrase "space harmony" and employed it to mean something about harmony as synonymous with such concepts as "balance" and "proportion," or to refer to "natural" and "organic" ways of moving. Certainly—bringing to mind the Florentine Camerata and the French Pleiad—Laban did believe that both "harmonious" music and "harmonious" movement have a particularly "quieting" or satisfying effect on both doer and viewer, and he thought that "grotesque movements" have as irritating an effect on human beings as does disharmonious music.[6] Similarly, he stated that each individual movement had a "vibration" unique to itself—just as each musical tone has its own measurable vibration—and that the relations between the vibrations of movements created patterns comparable to chordal vibrations in music (pp. 29, 66). Here the emergence of a close parallel between Laban's space harmony and

musical harmony becomes apparent. As further discussion will bring out, there are other, closer parallels between Laban's use of the term "harmony" in space and the musical use of that word.

As an architect, Laban was comfortable with plotting points in space, with manipulating geometric forms, and with thinking about how human beings move through designated spaces—for surely architects are designing spaces for human action. Laban's application of his architectural training to his view of human motion is made explicit in his use of the term "body architecture" (p. 25)[7] in his discussion of what he identified as the sphere of space, called the "kinesphere," around the human body. The concept of the kinesphere will be discussed more fully later, but I wish to note here that it is the starting point from which Laban elaborated his "second fact of space-movement," which is concerned with plotting divisions of the circle into geometric forms, each one punctuating and defining directions in space (p. 26)—fundamentally an architectural vision. His preface to *Choreutics* opens by introducing Pythagorean and Platonic geometry to the reader as the basis not only for Laban's own vision, but for the entire pageant of human movement and dance, from prehistory onward.[8] Again, it can be seen that Laban brought together his understanding of music harmony with his training in architecture as a basis for organizing his manifold insights into human movement in space.

In pondering and investigating the question of what makes space harmony "harmonic," I have come to realize that, indeed, there *is* a vertical or simultaneous set of relationships that Laban was identifying and uniting in his theory. These can be thought of as layers of Laban's thought that came together to make chords in his philosophy as well as in human motion. For one of these layers, he was concerned with *the division of the infinity of space into identifiable points, lines, planes, directions, and forms.* He used the constructs of Pythagorean mathematics to provide a foundation for his systematization of space: the circle—eternal and central to his view—could be poked, pushed, extended, prodded, compressed, and reshaped into a series of regular geometric forms. In three-dimensional space, the circle becomes a sphere, and the regular polygons which are made to emerge from the sphere are those taken from the "Platonic solids"—the tetrahedron, the cube, the octahedron, the icosahedron, and the dodecahedron. These five solids, or "crystals," are important and unique because they are polygons formed only by the use of identical equilateral planar surfaces joined together at their edges. For example, a tetrahedron consists of four triangles joined at their sides and with common apexes, so that together these triangles (without any other added plane) form a polygon. From this simplest of Platonic solids we can look at one of the more complex polygons in the series, the dodecahedron, which consists of twelve pentagons joined at their sides and apexes in such a way as to form a perfectly enclosed solid; or the icosahedron,

with its twenty triangles perfectly enclosed into a regular, equilateral form (see fig. 1). These five forms have long held mystical and alluring qualities for philosophers, theologians, scientists, and mathematicians.[9] Laban, here again truly a "renaissance" man, found them irresistible—but also highly useful—for the foundation of his theories. These solids serve as the basis for the determination of spatial points and pathways in the movement scales that Laban devised to illustrate his theories of space, to train dancers, and to analyze work actions.

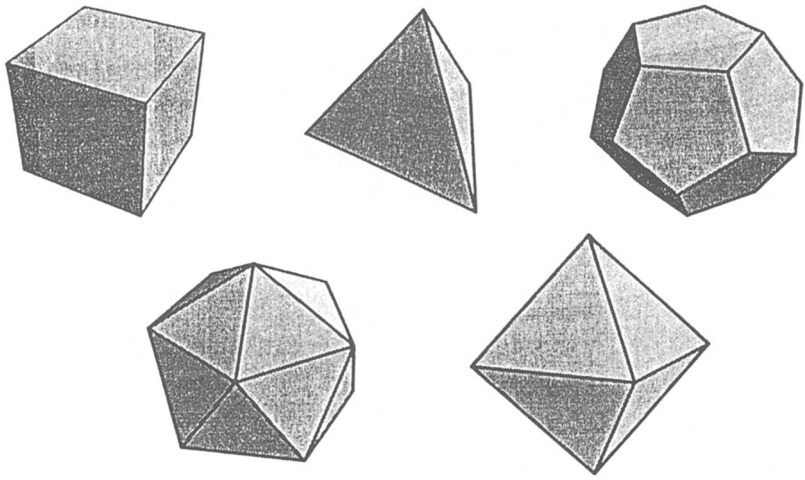

Fig. 1. The five regular polygons: cube, tetrahedron, dodecahedron, icosahedron, octahedron.

The second layer I have identified as part of the "vertical" relationship at which Laban was aiming in his theory of space harmony is *the architecture of the human body and its resultant potential for movement*. Here, Laban articulated his concept of the "kinesphere," of the flexion and extension of the limbs and torso into a circle of space surrounding the body, a circle carried with the body in every direction and position (see figs. 2 and 3). Peter Pan may have lost his shadow, but even he would be unable to get rid of his kinesphere. Laban saw the structure of the human body as giving the kinesphere its decisive spatial orientation: the vertical dimension is "the fundamental structural extension of the body," the right-left symmetry of the body gives us horizontality, and the third dimension, the sagittal, is most clearly established when the body is in motion in everyday life (pp. 18-19). Laban's work focused on how we are organized physically, how we move our bodies, and where we go with limbs and torso in space. Thus, he saw verticality as primary, horizontality secondary, and the sagittal dimension tertiary, for it was activated through our "plasticity" and de-emphasized in

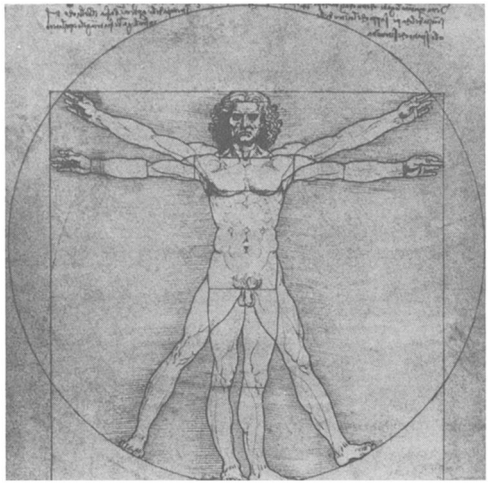

Fig. 2. Leonardo da Vinci's ideal man, inscribed within the circle and the square. From G. L. Hersey, *Pythagorean Palaces and Architecture in the Italian Renaissance.* Reproduced with the author's permission.

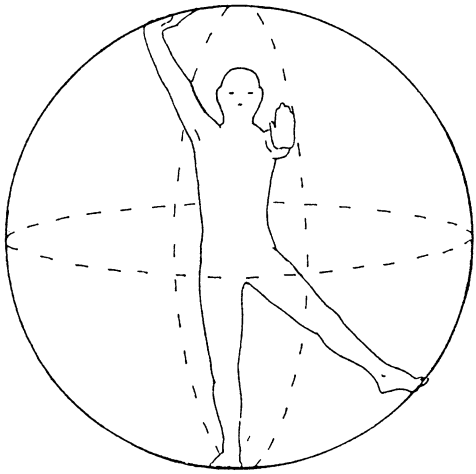

Fig. 3. The kinesphere. Figures 3 through 7 are from *Body Movement. Coping with the Environment*, by Irmgard Bartenieff and Dori Lewis, and are reproduced with the permission of Gordon and Breach Science Publishers.

our relatively flat structure when we are still. Rooted in a stance, each body part has a "normal zone" of motion that it can reach without the person having to shift weight or bend or stretch excessively; but when these last-mentioned sorts of movements are added—or if special training is undertaken—the limbs can reach "super-zones," enriching the repertoire of bodily motion greatly. Laban correlated the directions of human movement through the kinesphere with the spatial crystals he drew from Pythagorean mathematics. Here, we see two "notes" of the harmonic chord that Laban sought to analyze: geometric space and bodily architecture, which together create what he calls "spatial rhythm" (p. 26). Yet, within the idea of directions or points in space where the human body can reach or move, there is the potential for another "vertical" set of relationships to be identified: if more than one body part is in motion, a "chord" of spatial points is created. Indeed, since Laban was actually interested far more in *motion* than in the stance or static positioning, one can always identify a "chord" of each body's placement, at any one time, in the great flux of infinite movement that Laban saw as the true reality of motion—a reality that our perceptions break down into discrete "snapshots" wherein one position follows another (p. 3). These points in space, through which we see ourselves or another person move and create pathways, are reached not by some automatic process, but—most importantly—by our volition.

This brings us to the third layer of Laban's great chordal vision of the body in space: the dynamic quality of human motion. We move with certain "nuances" or dynamic qualities in the various directions available to us in space, and *most typically and "harmoniously," we find spatial direction and dynamic nuance occurring as one* (pp. 27-36). Indeed, spatial directions have their own dynamism, which becomes an important interpretive feature in performing the scales. This fact causes the meshing of another sphere with the kinesphere: the "dynamosphere." Here, according to Laban's theory of "affinities," vertical height and motion correspond with a feeling of lightness, and strength with vertical downwardness; movements that go sideward across the body confine our motion toward directness, while movements that open sideward expand it toward "flexibility"; contractions, which are quick muscular responses, move our body backward, while we feel the release from that withdrawal in a sustained forwardness (p. 31). These dynamics can be thought of as continuous strands of shifting qualities—lemniscate in nature, as Laban points out—that twist, knot, and unravel in a continuous revelation of dynamic range and potential (pp. 92-100). We more easily see spatial points than we see what Laban called "dynamospheric currents," yet space and dynamics are actually inseparable, and the former is reached or moved through as a result of dynamic generation or expressive volition. In this way, Laban's vision of movement links the physical and psychic worlds of man into one expressive unity—a theme

that is at the heart of another of his books, *The Mastery of Movement*.[10] This study of the dynamics of movement, in work actions and nontheatrical contexts as well as in acting and dance, was articulated and investigated in depth by Laban and his associates in the area of "eukinetics," which is today more typically absorbed in LMA into the category of "effort" theory.[11]

We now have our "vertical" harmony, in the sense that the term is used in music theory, with the creation of a three-note "chord" that brings together concepts of the geometric structure of space, the architecture of the human body, and the meshing of spatial direction with dynamic nuance. Yet I believe that Laban's theory of space harmony also includes the horizontal aspect identified in our earlier definition of music harmony—the contrapuntal or melodic aspect. For, as I suggested above, Laban saw motion as continuous and infinite. He understood that our perception forces us to grab snapshots, instants of motion, out of the great and ongoing flux. Yet he saw that these snapshots also identified paths—what he called "traceforms"—that had definite and identifiable shapes, were seen frequently in whole or part in everyday human movement as well as in art, and could be systematized into the scales of movement he devised. Laban looked to such movements as fencing and swimming to find these pathways, identifying their spatial points by starting with the three dimensions discussed above—vertical, horizontal, and sagittal. The dimensional scale, the first in the series Laban established, was drawn from the model of fencing and is also known as the "defense scale" (pp. 37-39). It follows a pathway with the right arm moving from high (defending the head) to low (defending the right flank), to left (protecting the left jugular vein), to right (protecting the right jugular vein), to back (crossing to defend the left flank), to front (shielding the abdomen). The dimensions thus established—vertical, horizontal, and sagittal—serve as the scaffolding for the octahedron, one of the regular solids (see fig. 4). This scale was then embroidered, altered, and reorganized to form parts or wholes of other scales in a brilliant series of maneuvers that develop first the "diagonal scale" (see fig. 5), which forms the scaffolding for the cube, and then various "transverse scales" which serve as the scaffolding for the icosahedron (pp. 42-45). In fact, the icosahedron is the polygon, or crystalline form, which Laban seemed to find closest to the form of the kinesphere itself and highly conducive to exploration of a full range of human motion. While the octahedron is represented by one scale (the defense scale) and the cube also by but one (the diagonal scale), the icosahedron has several: the A-scale, the B-scale, the primary scale, the girdle scale, and the axis scale. The A- and B-scales moved in fixed sequences (see fig. 6) from the corner of one plane to the corner of another, making either loops and curves called "volutes" or a series of steepled peaks and valleys, depending on the mover's spatial phrasing. The axis scale is based on a series of deflected paths which touch on icosahedral points but which surround a "pure" diagonal, as if the cube were envisaged within the icosahedron. The

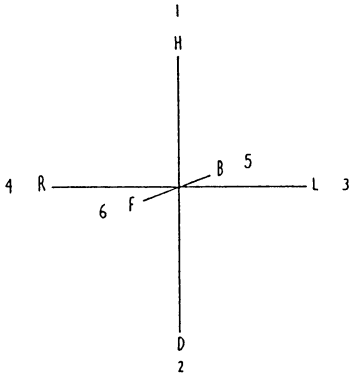

Fig. 4. The dimensional cross of axes: vertical, horizontal, sagittal.

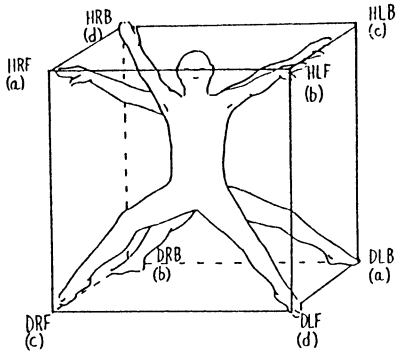

Fig. 5. The diagonal cross of axes, defining the cube.

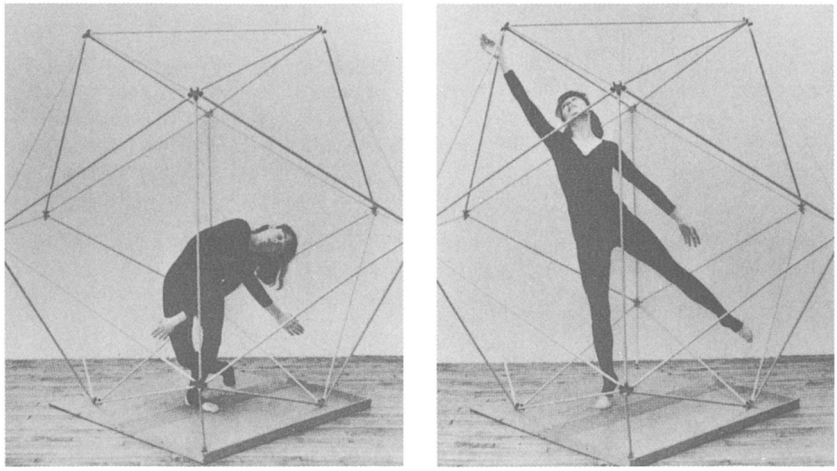

Fig. 6. Movements within the A- and B-scale sequences.

girdle is an equator that encircles the diagonal axis, much as the earth's equator forms a ring that rotates around the polar axis. The primary scale is formed by meshing the axis and girdle scales created for any one diagonal, in alternating sequence. These and several other pathways for movement exploration of the icosahedron bring to life the experience of bodily motion through geometric space.

In this sequence of scales that Laban devised we find that some move around the periphery of the crystal, while others cut through the body of the polygon. Thus, the fullness of these forms brings out the fullest in human movement potential, and the variety of these forms allows for exploration of that full potential in various types of pathways and with a wide range of dynamics. This becomes an exhilarating and delightful experience as one progresses with space harmony, for points in space that the mover has never experienced before become available to him or her, and pathways never moved through before become a part of one's motion vocabulary. When moving through the scales, one can feel the interrelationship of these crystals: the octahedron is brought inside the cube, which is inside the icosahedron. For example, the top and bottom of the octahedron—called "place-high" and "place-low" as the directional endpoints of the vertical dimension—pierce through the top middle and bottom middle of the cube as it rests flat; the corners of the cube pierce through the eight "polar" triangles of the icosahedron—triangles whose apexes are formed by the corners of the three planes (see fig. 7). Since the mover actually feels these forms around his or her body as representations of the kinesphere, this experience develops a highly dynamic and malleable sense of relationships, bringing together the space around the body, one's own physical potential for motion, and the widest range of dynamic expression.

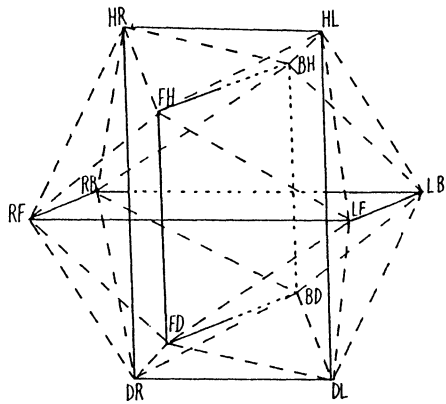

Fig. 7. The planes—vertical, horizontal, sagittal—defining the icosahedron.

To move from theory to practice, I will discuss now specific ways that space harmony in particular, and LMA in general, might be applied to dance education. From these examples, similar applications to other fields might become apparent. In curriculum development, LMA permits the planner to draw on one theoretical model for analysis, presentation, justification, language, and themes. Space harmony theory, by providing a means of approaching the organization of space and of human motion in and through space, allows one to notate and discuss movement from styles as diverse as Limon-based modern dance, Vaganova ballet, and the Navajo Night Dance. Students of dance technique can benefit from understanding exactly *where* it is in space that their movements are to be directed; rather than the teacher just saying, "the arms are overhead," he or she can specify that "the arms go to place-high." This is akin to telling a music student that the next note in a score should be a C#, not just "the note above C." In dance theory courses—such as dance history, ethnology, criticism, or style surveys—the same conception of spatial points, planes, forms, and paths will be applicable. For example, in looking at the torso position in much of African ritual dance, we can now say that it is inclined toward forward-low, the end-point of a diameter of the sagittal plane. This is far clearer than what I said before encountering LMA: just "inclined forward." Forward where? In more detailed analysis, we can bring in more complex body-space relationships: in a Graham technique high-release, the sternum leads the chest in rising toward place-high. Here, we have a body part performing a specific mode of shape change in a definite direction. Moving on to the dynamic nuances, later called "effort," which Laban integrated into his space harmony scheme, LMA provides a language and analytical tool for discussing the qualities of dance movement and for addressing a wide range of questions. Why does one way of nuancing a movement seem more appealing or appropriate than another? How do two different dancers choose to perform the same pathway or position differently? *Why* do they do this? Taking this exploration a step further, students can be led to examine their own movement ranges, preferences, and possibilities for gaining access to spatial areas or movement qualities previously unavailable to them. LMA thus becomes a tool for both self-knowledge and for the investigation of the movement beyond and around oneself.

As a choreographer and teacher of dance composition, I am creatively inspired by the scales, by the ideas of the planes and their cycles, by such once-novel concepts as volute or steeple phrasing within the same spatial pathway. These ideas can be used to create dances, to develop movement phrases, or to set up composition problems. Further, space harmony offers a tool for analyzing what is working and what is missing in compositions—one's own and others'. Why do the works of certain choreographers always look the same, no matter what the theme, the tempo, the casting, or other

variables? Now we can explore *why* this homogeneity exists: is it the repetition of certain pathways or planes, levels or directions?—the absence of some others?—the same effort range always used with the same pathway or with all pathways?—the legs always performing the strong actions and the arms always light and floating? A similar series of questions can be applied to one's own work in seeking to achieve the appropriate effect with each movement, rather than depending on the familiar and well-tried. In the teaching of composition, space harmony material can provide excellent and varied opportunities for improvisations, studies, and choreographic assignments.

Creating a systematic way of looking at the body as it moves through space gave to the field of dance/movement a tremendous resource, one that the art of music, for example, developed centuries ago. Now all researchers interested in movement have available to them a common vocabulary, a structure for analysis, a shorthand for notation, and a base from which to expand in looking at all kinds of movement, in many fields. Laban's body of work was vast, and the view here presented of space harmony provides but a glimpse into one of many areas of his investigation. His work was continued, deepened, and expanded by numerous students and colleagues who have applied his theories to such fields as choreography, dance education, theater, directing, actor training, folk dance, general education, child development, worker efficiency, management training, dance/movement therapy, physical therapy, kinesiology, nonverbal communication, ethnology, and fitness. Yet, the many layers or strands of Laban's thought—each one of which could take volumes to explore and which have occupied later thinkers for generations—converged on the subject of space harmony, which seems to have been a cradle of Laban's theory. All had direct bearing on his overall vision of human motion, as well as on the systematizing process that Laban set in motion and called "space harmony" or "choreutics."

NOTES

1. For information on Laban's life and work, see John Hodgson and Valerie Preston Dunlop, *Rudolf Laban: An Introduction to His Life and Work* (Plymouth, U.K.: Northcote House, 1990).
2. The major U.S. center for the study of this system is the Laban/Bartenieff Institute of Movement Studies in New York, which has a certification program in LMA. In London, the Laban Centre for Movement and Dance offers undergraduate and graduate degrees that include Laban studies.
3. An English edition of *Choreutics* was published by Macdonald & Evans in London in 1966, with notes and additional text by Laban's longtime collaborator in England, Lisa Ullmann. Under the title *The Language of Movement: A Guidebook to Choreutics* this work was published by Plays, Inc., of Boston, in 1974. It is to this last edition that references in this article are made; they are indicated in the text as page numbers in parentheses.

4. Irmgard Bartenieff and Dori Lewis, *Body Movement. Coping with the Environment* (New York: Gordon and Breach, 1980), p. 29.
5. "Counterpoint," in *The Concise Oxford Dictionary of Music*, 3d ed. (New York: Oxford University Press, 1985), p. 285.
6. Rudolf Laban, *Rudolf Laban Speaks about Movement and Dance*, ed. Lisa Ullmann (Surrey, U.K.: Laban Art of Movement Centre, 1971), pp. 41-42.
7. Also used by Bartenieff in *Body Movement*, chap. 2.
8. See also *Choreutics*, "Introduction," pp. 3-9.
9. For example, among the many thinkers who were attracted to the concept of the five regular solids was the illustrious physicist Johannes Kepler. He worked doggedly from the late sixteenth to the early seventeenth centuries at trying to force a system of planetary orbits to match properties of the Platonic solids, but he finally admitted defeat in this seductive proposition (although he clung to Neoplatonic theories of numerical harmony) and instead turned to the establishment of his great laws of planetary motion and speed. So Laban is in good company with other madmen and geniuses in grasping the Platonic solids as a means toward understanding problems of human-and-cosmic dimension. In Laban's applications, fortunately, the regular solids satisfactorily served his ends.
10. Rudolf Laban, *The Mastery of Movement*, 2d ed., revised by Lisa Ullmann (London: Macdonald & Evans, 1960).
11. The classic text on this subject is Rudolf Laban and F. E. Lawrence, *Effort: Economy in Body Movement* (Boston: Plays, Inc., 1974).