

COMPARISONS AND CONTRASTS: SYMMETRY AND ASYMMETRY IN FUNCTIONAL AND EXPRESSIVE MOVEMENT.

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Abstract: *The body in motion is in a constant state of flux between symmetrical and asymmetrical actions. Understanding the logical application of these concepts in movement, in different environments, is important pedagogically. Using comparisons between educational gymnastics and creative dance the paper explores the use of symmetry and asymmetry as factors of control and aesthetic appreciation.*

Physical educators, whose articulated orientation is movement education, work with categories or concepts in order to study functional and expressive movement from a particular perspective. This conceptual or thematic approach to teaching allows the educator to channel the student's kinaesthetic perceptions along avenues that provide a progressive and comprehensive awareness of the body in motion. Themes such as curling and stretching, twisting and turning, directions and pathways, suddenness and sustainment, matching and mirroring and symmetry and asymmetry contribute to the cognitive and kinaesthetic knowledge of the mover. This paper uses the strategies of comparisons and contrasts across two different movement forms, dance and gymnastics, to demonstrate the influence of symmetry and asymmetry in both functional and expressive movement.

Dance is considered to be a more expressive form of movement, expressive in the sense that the purpose of the movement is to convey something about the meaning of the dancers' focus. For example, if dancers were working on "pressing" actions, then, more than likely, they would be conveying the *qualities* associated with pressing rather than with actually pushing or moving a large object. In gymnastics, however, pressing against a surface will produce an effect on the body, such as a take-off for a vault, or an isometric contraction in the muscles resulting in increased control in balance. The pressing has a function. Although both forms of movement may have an aesthetic component which renders them pleasing to the observer, each movement form has a different intent. How, then, is the concept of symmetry and its antithesis of asymmetry used differently in dance and gymnastics?

The importance of symmetry to the body in motion is intertwined with evidence of control and aesthetic appreciation. It is therefore imperative that teachers involved in the education of the physically active body understand this from a pedagogical perspective. Interpretations of terms such as bilateral symmetry, alternate symmetry, symmetry in time, and symmetry in design, need to be addressed in relation to how they complement such themes as transference of weight, balance, rotation or changes in direction. Application of these concepts may differ in each environment, particularly with respect to the progressions used in teaching.

A truly symmetrical object could be divided through any plane and remain equal, for example a cube or sphere. Bilateral symmetry refers to an object that can only produce symmetry by division in one plane. Thus, the human body is bilaterally symmetrical, as it can only be divided equally along the vertical line of the spine. It is impossible to achieve symmetry between the upper and lower halves of the body. Mauldon and Layson (1979) offer a comprehensive definition which suggests that symmetry is maintained by "equal portions of the whole being distributed on either side of a line or plane into two or more parts exactly similar in size, shape and in position relative to the dividing points" (p. 114). This is clarified from a dance perspective by Preston-Dunlop (1980), who suggests that symmetry is usually associated with body design in that "the patterns and positions made by one side are taken as mirrored on the other side" (p. 3). A visual image of this is seen in figure #1, where the person on the left does not provide symmetry of the right and left sides of the body in respect to the limbs being different in shape and position relative to the spine, whereas the individual on the right shows equity on either side of the spine.

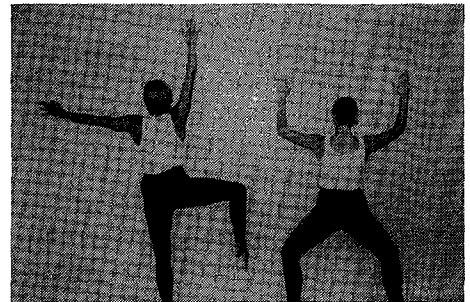
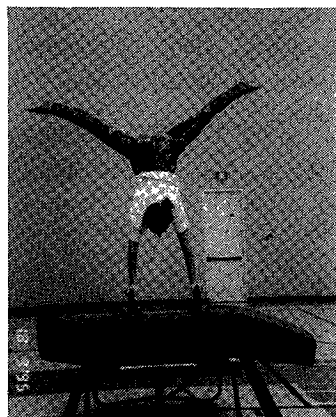
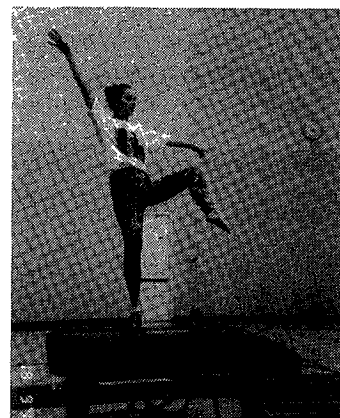


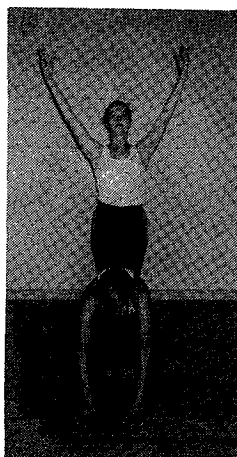
Figure 1

The kinaesthetic sensation of symmetry in body design helps to make balances easier

in gymnastics. Having an equal distribution of the body parts over the base of support allows for greater stability in balance and also serves to heighten aesthetic appreciation. On the other hand asymmetrical placement of the body shape is far more difficult to achieve in balance and, unless performed with great skill, will give the appearance of a lack of control.

Figure 2**Figure 3**

In dance, the stability and control offered by symmetrical shapes tends to be limiting and may lead to a lack of fluency in transition. Asymmetry, however, provides a broader range of interesting shape possibilities. Both serve a distinct purpose in that they have a place in communicating different meanings. Symmetry tends to convey the impression of harmony, consolidation and equality (figure #4), whereas asymmetry offers the potential for changing, conflictual and interactive relationship dynamics (figure #5).

Figure 5**Figure 4**

In gymnastics, the symmetrical form is often difficult to execute in relation to the theme of transference of weight. This limitation is due to the fact that symmetrical actions are restricted to forward, backward, upward and downward directions of motion. Any sideways or diagonal movement would produce a unilateral stress leading to an asymmetrical emphasis. It is these asymmetrical transferences, utilizing twisting and turning actions, which are used most frequently in the transitions required to provide logical sequences of movement. Dancers rely on these asymmetrical actions to give variety and to allow greater fluency in linking different motifs. They use rotations around the vertical axis far more frequently than those around the horizontal axes and they appear to enjoy the mobility of "off balance" actions far more than gymnasts.

Symmetry during transference of weight occurs more naturally as alternate symmetry or symmetry in time. These are synonymous terms indicating the use of an asymmetrical action which is repeated immediately with a lateral inversion; that is an action performed with one side of the body leading would be followed by the same action done with the opposite side leading. A number of repetitions of these actions would produce alternate symmetry (as in walking) or symmetry in time as the left/right/left/right stress would equalize over a period of time. Partners may use this most effectively as it allows for subtle differences to go unnoticed to the untrained eye. In figure # 6 one dancer rises as one falls, after repeating the action a number of times there is a sense of symmetric perception which masks the minor differences between the dancers. However, if they had both performed the movement together at the same time, it would have been extremely difficult to produce the same height, shape and synchronization. Alternate symmetry is therefore easier to utilize in forms of locomotion, whereas symmetry in design is relatively easy for partners to produce in positions of stillness (figure #7).

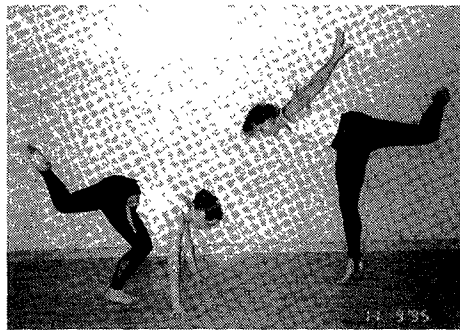


Figure 6

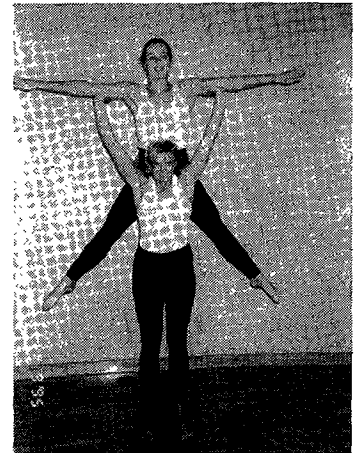


Figure 7

With respect to group configurations in dance, as the numbers increase so, too, does the difficulty of producing harmonious symmetry. It requires great skill kinaesthetically to produce an asymmetrical shape as an individual and transpose this mentally into a symmetrical group shape. As individuals do not all share the same shape, size, or flexibility they must "sense" where to fit into the overall design in order to create the illusion of symmetry. (figures #8 & #9). It is easier, therefore, to introduce group symmetry through solid designs which have evolved from individual symmetry (figure #10). This projects a feeling of group harmony and solidarity.

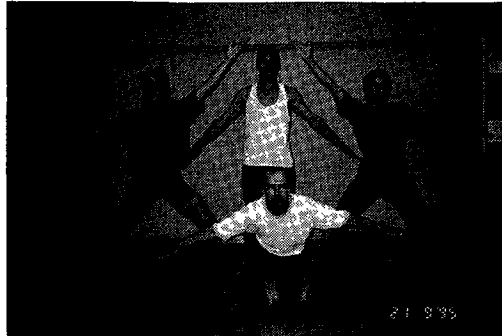


Figure 8

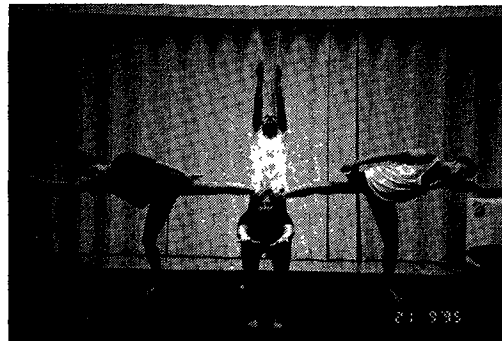


Figure 9

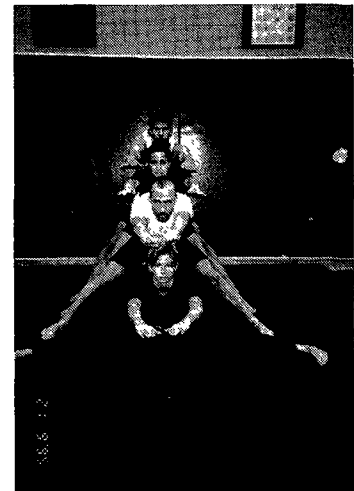


Figure 10

Yet another way in which group harmony may be conveyed is by the use of individually discordant shapes which intersect in such a way as to produce a vision of group symmetry. These collective asymmetric links often form some of the most exciting movement patterns in both dance (figure #11) and gymnastics (figure #12).

The importance of symmetry in the human body cannot be emphasized enough as a valuable concept to any physical educator. It provides a plethora of ideas for focusing on different movement experiences and if introduced with the right progressions in the various media it will extend the students' kinaesthetic perceptions.

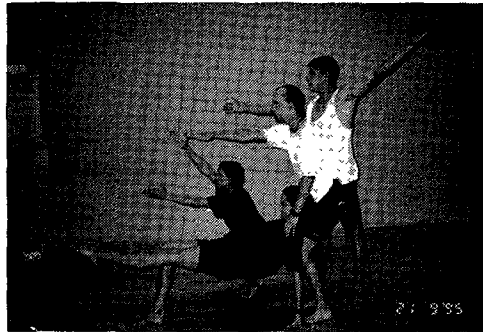


Figure 11



Figure 12

Acknowledgements

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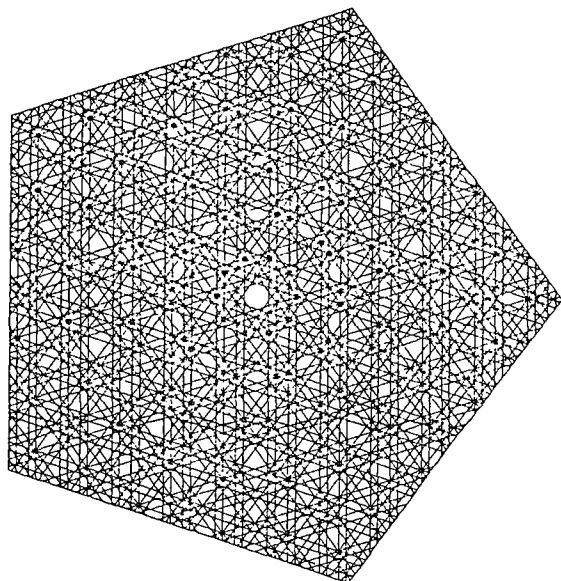
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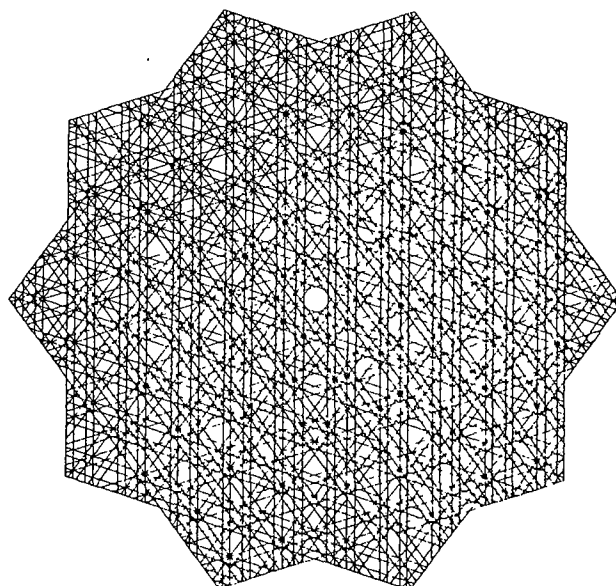
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