Symmetry in Dance

Dance is everywhere, and although many people do not realize it, dance, by itself, is one of the most important and vital things in our society. Besides being a beautiful art on its own, it is found as a support for music videos, musicals, plays, and so much more. Dance is also a part of people’s daily lives since people jam out to music they listen to all the time.

The beauty of dance comes from the formations and poses that people are able to put their bodies in. Many do not notice it, but the symmetry of the left and right side separates the easier poses from harder ones, allowing these specific placings of the body to create the beautiful movements we are able to see. Without symmetry and being able to find a center point, dancers cannot balance or execute movements well. In addition, formations without symmetry for group dances make choreography really uncomfortable to look at because people would just be all over the place.

The terms used to describe symmetry in dance differs from those used to describe symmetry in shapes and objects. The first term is called a symmetric position. A symmetric position is identical on the right and left sides of the body. These positions allow dancers to feel stable, balanced, and resolved. Symmetric positions are typically considered the easier poses since finding the center point of the position is literally the center of the dancer’s body. Many beginner dancers are taught symmetrical positions as a way to lay a foundation before learning more advanced poses.

![Images of dancers in ballet poses]

Figures 1 and 2. These photos demonstrate some of the most basic poses of ballet. Notice the reflection of the left and right sides across the center of the body.

Symmetry also lies within the choreography of poses between dancers. These are called symmetric sequences, which is when movements to the right are mirrored by movements to the left, and vice versa. Symmetric sequences are seen more often in group dances, as this type of symmetry requires more than one person in order to work. The poses held by dancers appear to be mirrors of each other, with the center between the dancers as the line of symmetry. This type
of symmetry is used often in choreography, and dancers are often taught to look for their mirrors or learn from their mirrors in order to speed up the learning process when choreography is being taught.

Figure 3. The two ballerinas in the front are mirror images of each other. Their line of symmetry is down the space between them. Notice that the symmetry is no longer along the dancers’ body.

In addition, symmetry and asymmetry lie in the formations that choreographers place their dancers in. These types of symmetries are called spatial patterns. Choreographers use these to change up choreography and formations in order to evoke strong and weak dramatic effects for audiences. Symmetry in spatial patterns allows formations to look clean and organized and easy for audiences to interpret. Without any type of symmetry, choreography looks messy and uncomfortable to look at. It also makes it difficult for the choreographer to convey a story through the dancers’ movements. There are many different types of formations, but as the following images show, each formation contains a line of symmetry somewhere, regardless of how many people are in the formation:
Figure 5. A group formation with 10 dancers still shows symmetry. The left half and the right half are placed identically. (disregard the coloring of the dots)

Figures 6 and 7. These group formations each have a different number of dancers, but symmetry still applies, making the choreography nice to look at.

Besides being symmetrical, there are many poses in dance that are called asymmetric positions. Asymmetric positions are different on the left and right side of the body. These poses are often considered more advanced, as they suggest mobility and a potential loss of balance. Asymmetric poses are unstable, lopsided, and unstable and require great technique in order to execute well. Any small imbalance or shift of the center point can cause a position or move to not look as intended. For example, when doing turn on one foot, the left and right sides of the body are clearly different. A dancer who is able to clearly find and maintain his or her center point throughout can do more turns than one who is not able to find his or her center point. Often, what separates amazing dancers from good dancers is the ability to control where the center point of the body is while the symmetries of the body change. Not surprisingly, a human’s body is also not completely symmetric due to small imperfections, so even if poses are “symmetric,” they are not really symmetric.
Figure 8. This is one of the most daunting poses in dance. Clearly, the pose is not the same on the left and right side of the body. Finding a center point here is very important, or the dancer would not be able to hold the pose up long enough for a photo.

Figure 9. Another beautiful asymmetric pose in which balancing would be difficult if the incorrect center point was found.

Translations are often found in dance as well. This is when an image, or pose, is moved across an area. Translations are used often in choreography, such as when people in a line all do the same pose.

Figure 10 and 11. Same pose but moved across from dancer to dancer.

Lastly, besides the symmetry in dance, geometry also plays an important role in dance. The angles of arms, legs, head, etc, are all very essential to how uniform and in sync choreography looks. One person whose angle is off can ruin the entire image of what a formation or pose is supposed to be. Notice that a great difference between professional and amateur dancers is that professional dancers are much more in sync with each other in that they pay attention their angles and mirrors. Dance is beautiful, and it is beautiful because of its symmetry, with the help of geometry.