

A SYNCRETIC ANALYSIS OF THE DUALITY OF DANCE AS ART AND SCIENCE

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Abstract

This paper examines the duality of dance as both art and science. It argues on the premise that only the manifestations of dance as an art form has been explored whilst its scientific manifestations have been arguably ignored. It avers that duality is seen in the processes involved in dance choreography. In doing this, it maintains that dance as an art often manifests in the intuition and creativity involved during the creation of dances while dance as science manifests itself during the execution of movements. It argues that the traditional practitioners of dance in Nigeria and Africa are generally aware of the scientific nature of dance, which they adhere to unconsciously while creating dances without knowing it has a scientific posturing. The article insists that intelligence displayed in dance choreographies attests to the above claims. The study uses syncretism and Humphrey-Weidman theory of dance composition as theoretical moorings to contend that the Agbaka dance of the Igala people of Kogi State in North Central Nigeria expresses and displays the scientific nature of dance. Consequently, the dance form is examined from the physiological, psychological and biomechanical perspectives, informing the conclusion that dance practitioners in Nigeria should engage in a conscious exploration and admittance of dance as both art and science.

Keywords: Syncretism, Art, Science, Duality of dance, Biomechanics, Agbaka dance

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Introduction

Dance has been perceived by many as a functional and purposeful manipulation of the rhythmic movement of human body in time and space for entertainment purpose. There may be no contention in accepting the fact that dance, is an art form, but inadvertently difficult for many to accept or believe that the process of putting up a dance is also basically scientific. This is because many are yet to come to terms with the duality and bipartite nature of dance as both scientific and as art form. For instance, the first thing Constantine Stanislavski identified in natural acting is the actors' state of mind. Dance is a creative process that often put a demand on the players' (dancers') state of mind. It means as a creative endeavour, the execution of dance steps comes from the internal manipulation of the instinctive stimuli before its external manifestation. This may imply that, the idea of the dance and the messages must be mooted instinctively in the first place before any other process. That is, to admit that emphasis may be placed on both the internal and the external intuitions. This ultimately leads to a blend of physical and psychological instincts evident in Constantine Stanislavski's method of acting. Conversely, in order to respond to creative intuition evident in the creation of dance steps and its movement in dance practice, training experts may be required in the process of making the dance. For instance, inhaling and exhaling of air to avoid undue collapse on stage demands scientific applications. For example, in trying to execute dance movement, there is a certain voyage of the air along certain parts of the body. As the air inhaled gets into the body through the nose, it often goes into the lungs. In the process one may find out that his or her chest must have expanded. But as soon as one exhales the stream of air from the lungs, the chest will resume its usual position. It means that the processes of inhaling and exhaling pass through a respiratory mechanism which may be considered scientific in dance choreography and practice. Ossie Enekwe (1991, p.11) corroboratively asserts that:

As a universal phenomenon, dance has a biological base. The possibility it gives to man for both physical relaxation and psychic/emotional release has engaged the attention of scientists, who has demonstrated that movement is essential to both human beings and animals for the release of emotional tensions caused by both joyful and painful events.

More often than not, beginner dancers and choreographers are basically not aware of biomechanical principles in dance movement

and its performances. They often fail to consider the relative implication of the structural movement of the body and the laws of physics that governs motion. Enekwe stresses further that because a human being is superior to animals in his or her capacity for conceptual thought, his or her movement conveys sophisticated meanings in a more compact and rapid manner than speech. Movement is, therefore, closer to the biological existence of humans than language with its code system already verbally externalised (1991, p.11). It is in view of the above that this study seeks to examine the dualistic nature and bipartite functions of dance as both scientific and as an art form.

Theoretical Mooring

This article finds theoretical bedrock in the theories of syncretism and Humphrey-Weidman theory of dance composition. The theory of syncretism gives impetus to the combining of different beliefs while blending practices of various schools of thought. It involves the merging or assimilation of several original discrete traditions, especially in the theology and mythology of religion; thus asserting an underlying unity and allowing for an inclusive approach to other faiths. Syncretism also occurs commonly in expressions of arts and culture (Jerry Bently, en.wikipedia.org/wiki/syncretism). Writing on syncretic theatre, Egwuda-Ugbeda (2014) claims that syncretic theatre involves those theatrical products which result from the interplay between the western theatrico-dramatic tradition and the indigenous performance forms of a postcolonial culture.... Egwuda-Ugbeda further explains that syncretism is an effective means of decolonizing the stage, utilising it as the performance forms of both European and indigenous cultures in a creative recombination of their respective elements without slavish adherence to the one tradition or the other (2014, p.109). One may be right to say that syncretism has helped in creating cultural compromise. It provides an opportunity to bring beliefs, values, and customs from one cultural tradition into contact with, and to engage different cultural traditions (Bently, en.wikipedia.org/wiki/syncretism).

Doris Humphrey and Charles Weidman were leading figures of American modern dance. They were known not only as dancers and choreographers but important theorists of dance composition. They concern themselves with the nature of movement as a physical and natural phenomenon. Humphrey-Weidman's theory of dance composition states that, "for a movement to be initiated a body at rest must be struck by a movement impulse strong enough to counteract its initial and then for the movement to stop, it must be checked by an equal and opposite force; it is a theory that concerns itself with the object at rest and in motion" (Reynolds & Reiner-torn, 1980, p.148).

Humphrey-Weidman theory further lies in dancers giving to swing movement, checking the motion at will, the movement through space, rising and falling, leaning far off balance and regaining equilibrium. This implies that the theory has psychic as well as physical implication. Humphrey-Weidman's way of moving is a metaphor for humanity itself caught between its drive for action. The theory further emphasizes that; all movements exist in relation to gravity or giving into it at varying degrees. Humphrey-Weidman (1959) believes that all movements have design in space, a type of energy flows on dynamics as a reason being or motivated. For instance, in applying this theory in Agbaka dance composition of Igala north central Nigeria, choreographers ought to consider the simple mechanics of motion, laws of gravity that governs motion, physical education and exercises to guarantee effective movement combinations. This may be guaranteed with adequate knowledge of science and the laws that governs motions.

Agbaka Dance of Igala in North Central Nigeria

Within the praxis of Igala cultural milieu, Agbaka dance performance was originally called Iya-Igba. Agbaka dance performance is thaumaturgic (magical) in nature. Okpanachi in an interview with the researchers succinctly affirmed that the word 'Agbaka' is a coinage from Iya-Igba. According to him, the original custodian of Iya-Igba was identified as Unubi Agbaka. People (spectators) are usually thrilled in appreciation as well as hailing the performers as "Iya-kaiii-Agbaka" due to the wonderful display of agility, dexterity and precision. Hence, the coinage of the acronym 'Agbaka dance'. This acronym basically was as a result of dexterity, acrobatics, spinning, and the exhilarating nature of the dance performance. The coinage of the acronym "Agbaka dance," therefore, becomes an adjective qualifying Iya-Igba. According to Iyeh and Onuche (2015), it will be unreasonable to stage Agbaka dance performance amongst the Igala people of Kogi State without the accompaniment of the flute. This is because; the flutist dictates the dance steps during performance. He initiates the songs, re-enforces the mood, and cues the dancer into action. Agbaka dance is a very energetic dance characterised by gymnastics and acrobatic vocabularies – tumbles, jumps, summersaults, spins, vibratory movements, stunts, crabwalks, etc. The movements are executed with speed, force, grace and precision. The dance requires agility, flexibility, balance, strength, cardio-respiratory fitness, skills, mental presence, biomechanics alignment awareness and concentration. The Agbaka dance execution will not be possible without conscious or unconscious knowledge of the above. Thus, because of the hitherto unknown scientific nature of this dance, many till date still attribute the feats exhibited in the dance to magic – see figures 1 and 2.



Figure 1: Agbaka Dance Performers in a Dance Rehearsal.



Figure 2: Gymnastic and Acrobatic Displays by the Agbaka Dancers.

The Concept of Biomechanics

Vsevolod Meyerhold, a Russian dramatist and an avant-garde theatre director is universally acknowledged for articulating biomechanics principle both in acting and in dance practice. He experimented geometrically; pattern of movements, improvisation and rhythm techniques that have shaped and reshaped theatre practice. The point of interest to this study is the technique and scientific approach of Meyerhold biomechanics to dance practice. Biomechanics places specific emphasis on acting and proselytising directors (choreographers) to train performers (dancers) in proportion to machine age. The principle of biomechanics, therefore, posits that for actors (dancers) to get their desirable emotions and joy as well as to achieve desirable responses from the audience (spectators), there is the need for them to accomplish appropriate and apt kinetic patterns and concept. Lawal asserts that "biomechanics is the acting system which trains an actor to be as efficient as a machine in order to respond instantaneously to the director's need in a similar premise" (2010, p.41). Adora affirms that "Vsevolod Meyerhold is one of those radical thinkers who have explored natural science and exhuming from its base, refined ideas that helped him to develop the theory of biomechanics and constructivism to meet artistic finesse" (2010, p.36).

To this end, performers must endeavour to tread on the part of the aforementioned natural science in order to accomplish acrobatics, gymnastic, ballet manoeuvres and circus movement. Duruaku argues that "theatre as a synthesis consists of the art of the playwright, the art of the performer and the arts of some persons, such as the director, designer, composer and the choreographer" (1997, p.5). Agreeing with him, Edwin Wilson avers that "all performers before the twentieth century moved in a more formalized manner than we are accustomed to on stage, in films or in television" (2001, p.19). In order to accomplish the science of biomechanics in traditional African dance, one needs to engage in proper training in order to be acquainted with the laws of gravity and physics that govern motion. This is in view of the fact that execution of dance(s) is through the rhythmic body movement and, in doing so, its scientific nature manifests. Furthermore, Wilson argues that "performers must engage in a series of exercises and programmes that would enable them assume the state of robot-like kind of dancers who must use their bodies to accomplish stylised and symbolic movements" (2000, p.117). Stylized movement such as acrobatics, summersaults, stunts, spins, and so on are part of what Meyerhold refers to as biomechanics. Below are the typical warm up exercises for body movement as Stanislavski directs in performance:

- i. lie on your back, beginning with the feet, tense and relax each part of the body; knees, thighs, abdomen, chest, neck-moving up to the face. Note the difference in relaxation of various muscles and of the body generally after exercise is completed;
- ii. stand with feet parallel approximately as far apart as the width of the shoulders. Lift one foot off the ground and loosen all joints in the foot, ankle, and knee. Repeat with the other foot off the ground and move to the hip, spine, arms, neck etc. loosening all joints;
- iii. begin walking in a circle, walk on the outside of the feet, then on the inside, then on the toes, and then on the heels. Notice what this does to the chest of the body. Try changing other parts of the body in a similar fashion and observe the effect on feeling and reactions; and
- iv. imagine the body filled with either helium or lead. Notice the effect of each of these sensations while standing in one place and while walking. Do the same with one body part at a time—each arm, each leg, and the head (Wilson 1998, p.119) – see figures 3 and 4.



Figures 3 and 4: Rehearsing the Science of Biomechanics in Agbaka Dance by Performers.

Extrapolating from the above exercises, one can easily attest to the scientific nature of dance. This is because; an understanding of the body parts and their movement potential make more complex and intelligent movement possible in dance performance.

The Syncretic Duality of Dance as Art and Science

It is a truism that each culture has its own distinctive styles of dance and reasons for dancing. Many Nigerian (African) scholars attest that dance is one of the oldest forms of art, even though dance scholarship in Nigeria is still in its infancy. It is probably in this connection that Iyeh (2015, p.1) argued that “social scientists in the past thought that dance is not such a serious aspect of culture to investigate. Therefore, it did not attract their patronage in research and documentation.” In traditional African dance for example, Agbaka dance movements are often vigorous. Its steps are mathematically calculated in accordance with instrumentations to underscore its precision. Agbaka dance performances are usually in stages of acrobatic (biomechanics) and footwork displays. Virtually all choreographers and dancers engage themselves in counting steps while creating and executing movements in dance. Without the knowledge of addition and subtraction in movement, Agbaka dance may be impossible. Even the beat that comes from the instrumentalists especially from the flutist are often calculated and acted upon by both the dancers and the choreographers.

In spite of the intricacies involved in discovering the scientific technicalities on how to make Agbaka dance movement, many people often trivialise it mere entertainment. The high level of expertise exhibited by the flutist and the drummers provide a favourable and healthy atmosphere for Agbaka dance. Many theatre scholars fail to major in dance probably as a result of its scientific nature and procedures in executing its movements. It is appropriate for us to note that mathematics is involved in the teaching and making of dance movement. This is because, without calculating the beats from the instruments, one may be lost in the process. Adeoti (2014) affirms this position on the nature and how difficult it is to dance when he admits that, from his experience, dance is a complex and demanding art. No wonder it is usually few people in the society who take to it as a profession and fewer still, who venture into it in the academia.

Mechanics of Motion and its Implication for Dancers and Choreographers

Biomechanics deals with the study of human body and the laws that govern motion. Consequently, efficient application of biomechanics

calls for an understanding of simple mechanics in motion. Wilson and Buffa (2000, p.3) state that:

Mechanics refers to the branch of physics that deals with the study of motion and the process that cause effective motion. They argue that the movement of any implement is rendered by the influence of the laws of mechanics. These are force, gravity, friction, stability (balance), acceleration, velocity, and motion to mention some.

The aforementioned laws are operational in dance execution, especially in Agbaka dance movement. The execution of Agbaka dance movement is practically impossible without the laws of gravity and stability. The gravitational force is that kind of force that makes an object or the body to fall to the ground. There is need to study and appreciate the orientation of these forces to ensure effective movement in Agbaka dance package either on screen or stage. In the process of falling, there is also the need to maintain stability and balance. In a similar vein, it is worthy to note that, motion (moving) connotes a change of place or position at a particular instance. Wilson (2001) opines that, "all bodies or objects are capable of moving from one place in position to another and if only force is applied to them" (p.33). This implies that the force must overcome the object or body weight to enable it to move. For instance, James Isaac Newton's first law of motion sometimes called the law of inertia states that; "in the absence of an unbalanced applied force, a body at rest remains at rest, and a body already in motion remains with constant velocity-constant speed, and direction" (Wilson & Buffa, 2000, p.102). Drawing from this position, it then means that a change in motion or an acceleration (change in speed and direction) is evident in force. Force is applied by human body through a continual manipulation of muscular and skeletal system complexes.

The implication for Agbaka dance practice is that, dance and choreography are movement activities, when a dancer moves or travels on stage, his or her position changes with distance (length), speed, and time especially as noticed in the acceleration of the footwork and spinning in Agbaka dance performance in figures 3 and 4. As a matter of fact, performers or dancers must be constantly reminded of the nature of the dynamics of movements, the distance (length), speed and time travel and their relationships to the force at play. The study of force is, therefore, necessary for budding dancers and choreographers whose aim is to accomplish biomechanics principles in Agbaka dance practice.

The Principle of Force and Stability

Force is simply something capable of changing an objects state of motion. It is energy expended to change the state of motion of a body or object. In another way, motion can only result when considerable amount of force has been applied to overcome the object's inertia. Therefore, understanding Newton's first and second laws of motion clearly define the role of force, in the execution of movement of body or object. We have earlier explained Newton's first law of motion (law of inertia) as it concerns force and its effects on Agbaka dancers. For further clarity of the guiding principles of force, it is necessary to state Newton's second law of motion. It states that, "the acceleration of an object is directly proportional to the net force acting on it and inversely proportional to its mass" (Wilson, 1998, p.103). The direction of the accelerant is in the direction of its applied force. In all, the Newton's first and second laws of motion mean that force is applied to move an object or body and to change its direction. Force must be directly applied while executing Agbaka dance. This is done through the continuous manipulation of the muscles, nerves, and bones to enable the motion (movement) of the body or object take place. The study of force is important in the theatre because it would enable dancers and choreographers understand the science of movement in Agbaka dance as force will always be needed to pull, push, or move a prop or body on stage and screen when executing biomechanics in performative contexts.

Stability on the other hand, means balance or equilibrium. In all activities, whether stationary or moving, balance is an important factor in dance practice and must be considered at all the times. Afuekwe Andrew contends that "in achieving stability or balancing the body or object always make adjustment to balance itself at any given circumstances" ((2004, p.262). Agbaka dance is embellished with acrobatics, somersaults and spinning. Without the understanding of the principle of stability, there is bound to be accident on stage. Wilson and Buffa (2000) describe the condition for balancing or achieving stable equilibrium that, an object is in stable equilibrium as long as its centre of gravity after a small displacement still lies above and inside its original base of support. So it is with the movement of Agbaka dancers who are determined to accomplish biomechanics. Perhaps, performers will gain advantage in performing better when they understand the relationship between displacements versus body adjustment and balancing. In the course of accomplishing movement, movement patterns and movement combinations, the dancer's body may be displaced. The dancer's body inherently learns or endeavours to adjust itself to normal or balancing position. There is need for the

choreographers to learn and develop balancing skills in directing movement and its training process. Well articulated balancing skills would help the actors to perform various movements, movement patterns and movement combinations on stage and screen without much challenge.

Challenges of Biomechanics

If dance deals with the rhythmic movement of human body in time and space, then biomechanics which deals with human movement and the forces that act upon it becomes fundamental to dance art. It means that the application of the science of biomechanics and its principles in Agbaka dance performance becomes core for the dancers and choreographers, for instance. As biomechanics requires stylized and complex movements such as gymnastics, acrobatics, ballet and circus movements, then conceiving, developing and directing sufficient movements, movement pattern, and movement combinations in Agbaka dance become tasks for young and beginner dancers and practitioners today. Biomechanics principles and movement in physical education requires constant physical exercises and activities, then, constant movement training and exercises constitute another challenge to the upcoming dancers in the theatre today. Significantly, movement training by theatre practitioners involves ability to develop the actor's (dancer's) body as regards dance practice. This is because purposeful action in Agbaka dance depends on the dancer's body and a key to stylized movements. The application of physical training exercise activities and programmes in the training of Agbaka dancers, its physiological and psychological components become regimens for all Agbaka dance practitioners. It is imperative to argue that young and upcoming dancers, especially those who want to engage in biomechanics principle in the making of their dances must be knowledgeable in physical education and training.

Conclusion

This paper examined dance as both art and science and the relative implication of the laws of physics that govern motion in the making of Agbaka dance performance. The biomechanics principle and techniques as well as biomechanics in physical education exercises and training have also been X-rayed. The above are fundamental factors in accomplishing complex and stylized dance movement patterns as evidently noticed in Agbaka dance choreography. We have equally examined the challenges faced by dance practitioners as they relate to creation of dance movements via the science of biomechanics principles. The article argued that physical education, physical fitness

activities and exercises are the building blocks of dancers and choreographers, especially during dance composition. We are, therefore, persuaded that the duality of dance as an art form and as a science evidently manifests in the process of making Agbaka dance even as the scientific aspect of it is noticed in the execution of the dance movements.

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