

Dance through image, movement, motor and Human development

“Living, as dancing, is searching the harmony in the purity of the body, the word and the mind”
(V. Antón , Madrid agosto2015)

Maturana asserts that “the different human actions are defined by the emotion that supports them” because the language, the emotions and, I also dare to include, the movement, are closely linked to the conformation of the individual and its full development in the community. The Biology and Human life studies, from the perspective of the complexity, have preferentially been facing to the aspects related to neuropsychology and neurophenomenology, trying to incorporate the chaos theory, in which the mind is something virtual that cannot be exclusively localized in the brain, because it does not exist as a being independent of other systems.

The human movement starts at the beginning of the embryonic development, and the movement can be intrinsically related to the survival on these early stages, so just during the first three weeks of life, the embryo at the stage of morula moves to nest in the endometrial walls that will propitiate the nutritional nourishment needed for its development. Later from the most advanced stages in the intrauterine life up to the standing position, the kid will move through different periods genetically programmed that include the phylogenesis and postural human ontogenesis. Evolving from subsequent stages of locomotion with pathognomonic characteristics of fish (intrauterine life), amphibians (creeping) and mammals (crawling) until the upright and biped walking gait distinctive of human beings.

This perfectly registered information in our genetics , enables us to develop subsequent motor skills such as sports, speech and writing development, the use of utensils that enable us to adapt to the environment and to another more complex motor activities like martial arts or dancing.

Recent genetic studies have proved that the growth of embryonic nerve cells is accelerated when there is a connection of this cells with muscle fibers through the motor plate and that it is the electric/vibrating potential of the muscle fiber that induces this growing (CITA)

These discoveries support what was empirically known in the Neurologic physiotherapy, the indissoluble link of the brain and the muscle. It is particularly evident in the analysis of the human motor development in which the brain maturity items are associated directly with the posture quality and the child movements (Vöjta, 1990).

Traditionally it has been postulated that the ultimate goal of human movement is to enable the autonomous locomotion of the individual and the release of the hand as an organ of support to enable manipulation and the so called fine motor skills. Not in vain for years from the evolutionist perspective, the digital thumb opposition movements to the rest of the fingers has been qualified as an expression of the supremacy of the cognitive development of the human species, calling it "smart gripper", but as we get deeper in the study of human movement we can realize that this is a simplistic approach.

Morin poses several principles that characterize living beings, such as autonomy and self-organization, the loop between species and individual, the notion of the subject who is able to represent an end in itself, self-constituting a unit from a group of subjects with similar characteristics which in turn can form an us.

The language necessarily sustained in the proper development of the phonatory muscles and brain areas related to verbal expression and located at the cerebral cortex in the left hemisphere, arises from a perspective that allows human beings to feel as a subject; in addition the freedom which implies the cognitive ability to choose together with the love understood as the ability to feel fulfillment in connection with the other and finally the uncertainty of knowing if is the I who speaks or it is the I spoken by others which is expressed when I communicate verbally or by means of movement outward swinging between the poles of self-centeredness and universality. (Morin)

Given this conception of the human subject, body movement, whose ultimate expression is dance, is conceived immersed in the identity that one forges, that is to say, constituting it and making it visible (Ciurana , 2003).

Sócrates said that “the dancer when dancing with his whole being, takes part in the pure, immediate violence of the extreme happiness.”

The dance, defined by Martha Graham, as the outer space of the imagination. Dalcroze, musical pedagogue, stated that the music, despite everything, can provoke in the human soul the necessity of imagination and achievement. He also wondered why should we surrender to that power. Cervera Salinas, V. and Rodríguez Muñoz, A. (1999) affirmed that the soul is in the dance the happiness of liberation. The human body in the dance becomes a “soul”. It is a supreme moment in which the body fails to act for the utility to do so in their encounter with the open.

These sentences make clear that dance has a great influence on the emotions, indeed, it generates happiness. It also allows the expression of the imaginary world of the dancer opening his/her mind. And its vehicle, music, also leads to creativity and exploring the inner world. Besides this emotional bond, dance directly affects cognitive development, combining psychomotor, musical, creative and communicative factors.

The realization of coordinated movements and visualization of nice images stimulates our brain reward center (Krakauer, John, Columbia University). Parsons has shown that dancing improves working memory, executive planning, skill in performing multitasking and concentration. According to him the ability to dance depends, among other things, to have had early training in the practice of this discipline. Therefore, dance induces cognitive benefits, which are mostly insured if we exercise from childhood.

Many people around the world see life as a dance, from the movement of clouds to the changing seasons. The history of dance reflects changes in the way people know the world, relate to their bodies and experiences related to the cycles of life.

In India, the Creator is a dancer (Shiva Nataraj) that makes the world dance through the cycles of birth, death and reincarnation. In the early days of the Church in Europe, the cult included dance, while at other times it was banned in the western world.

In ancient Egypt the ceremonial dances were instituted by the pharaohs. They became so complicated that could only execute highly qualified professionals. In fact the dancers enjoyed great public prestige.

In ancient Greece they did not distinguish between poetry and music (and dance). Dance rituals to the gods have been recognized as the origins of Western contemporary theater.

In Rome the dance was considered dangerous, but during the reign of Augustus (63 BC 14 AD) emerged a dance now known as pantomime or mimicry in which communication is without words, through stylized gestures and movements, becoming a nonverbal language in the multicultural Rome.

More recently, in the last century in the United States they put into question all artistic concepts and new ways were sought in a context of complete freedom. Isadora Duncan created a style closely supported by her personal emotions. She created a dance according to her own temperament.

She was the first dancer who appeared on stage barefoot and wearing only classic-cut tunics. Her art did not establish a systematic vocabulary of her movements, not a technical one, but represented the musical impulses that she felt. She rediscovered the natural human gait, jump and run, devoid of unnecessary ornamentation. She introduces new types of characters on stage, inspired by ancient Indian culture, oriental legends and American Indians rituals. She said: "Dance for me is not only the language of the soul. It's the opportunity of entering into the depths of the body, opening a more real, more free, more harmonious listening"

Dance is the displacement of one or all parts of the dancer's body through the space, designing a form, driven by its own energy, with a certain rate during a longer or shorter duration.

The predominant use of either of the elements of movement (rhythm, space, time, form and energy) is not always even. In some dances rhythm dominates, in others the use of space and so on. According to the character of the dance the use of one element or other will be enhanced.

It is important to note, taking into account the last definition, that dance includes a proper use of time and space, which is subject to a rhythm and use of energy and also as a means of communication and expression.

Cervera Rodriguez Salinas and Muñoz (1999) asserts, "The act and art of dance are not intended as mere technical and artistic processes, as a mere body virtuosity, but they reveal the perceptual, the sensitive and intellectual categories".

Dance, improves overall fitness as any other physical activity, but with the advantage of being more motivating than other physical exercises, at the time to perform it, to keep and increase its intensity. The benefits are: muscle strength , flexibility endurance increase, and improvement of cardiovascular activity.

According to Robinson J. in his book "The boy and the dance, (1992)". The practice of dance also improves the development of the cognitive capacity, According to this author some skills will be developed such as: observation, memorizing, association, analysis, dissociation, synthesis, prevention, conceptualizing, combination and optimizes the sensory skills, sharpens the sight, the hearing, the kinesthetic and sense of touch. (Laban 1978).

The dance unfolds, perhaps unconsciously, our proprioceptive and kinesthetic learning mechanisms to observe-listen to the body and developing, therefore, this sense (as Hamilton, Iris, 1989), that transcends the purely physical to become a listener of our own being. This approach encourages to "discover" the ability to produce art, to be "artist" and develop through movement, according to our mind, qualities of sensitivity, perception, emotions, spirituality, creativity and communication. This not only helps the individual to be creative dancer and dance, but to be creative in any area of his/her life, even scientific, (Patricia Stokoe, 1996).

From the dancing point of view, it is not only a facilitator of physical, mental and emotional development. It is also a strong therapeutic tool that enables the ones who practice it to improve their health.

There are many therapeutic methods which have been supported in the dance through the ages, and reciprocally, the physiotherapy methods and practice can help the dancer to prevent or resolve injuries. In the Vedic texts the practice of conscious breath and body positions called "asanas" not only enable the prevention of organic pathologies but also prepare the person for meditative practice promoting mental health and the development of love, compassion and empathy.

Gerda Alexander (1976) "proposes the full recovery of the body so that, in perfect harmony with the spirit, the man reaches its full potential." She develops a method called. Eutony, from the Greek eu (good, harmonious) and tone (tension), which aims to balance the various tensions that co-exist in the body. It is a method to experience the man's psychophysical unity and to facilitate the dynamic exchange with others. This unit is achieved with intense observation and conscious action on our muscular and nervous tension, to reach a harmonious state. It would act on the tone of the striated and smooth muscles, on the autonomic nervous system and the neuromotor system.

The Eutony is not a strange method need to join to life; by contrast, it applies at all times and activities of it. The Euthony is interesting for healthy or sick people, athletes, dancers, the ones who perform physical labor or intellectual work. Since its objective is to empower the man to realize his own essence and act creatively. Its method is not disclosed in any book, it is something that requires the teaching and guidance of a qualified teacher, which in turn has been formed during a minimum of 3-4 years. The logic of this fact is that each individualized intervention for everyone, although the exercise practiced is the same, the results are not. Therefore there is no general method.

The motor has a leading role in eutony. Not any movement, but the so-called "eutonyc movement." It is a self – conscious movement, which has been investigated in the unconscious and determines it. We work a lot with the imagination, looking inside and outside and somatizing that experience (see and feel). The senses, especially the touch sense are the focus in eutonyc work.

The steps to be followed in this process are: Discover the surprising sensitivity of the skin, to reach a full consciousness of the body space. Regulation of the muscle tone. Finding the natural position being aware of chronic tensions that reveal the control of eutonic positions. The normalization of the breathing pattern by avoiding tension. Conscious influence in vegetative tensions through the contact techniques (with the ground, others) and approach. The eutonic movement is characterized by ease of implementation and low energy needs. It requires suppress tonic bindings. To achieve improvements in mobility of all joints technique prolongation (contact with the ground and the space around us) is used.

The musical educator Violet Hemsy of Gainza and the eutonist Susana Kesselman offer in their book "Music and Eutony" (2003) a conceptual and technical resources related to pedagogy of sensation and movement, and propose tools and various operational measures for the production of what the authors call state body art; ie a willingness to release the body of stereotypes and enable to invent other bodies, other possible tones.

Dance and Movement therapy is a form of therapy that has been used for years with excellent results and although at the beginning used only with mental patients, they have now proven its benefits in people with different types of motor or sensory disabilities and as a way to channel the stress, tension and depression. It is an interdisciplinary therapeutic approach that synthesizes the art of movement with the science of psychology. Having its source in the confluence of knowledge built by the psychology of the twentieth century in the fields of psychotherapy and psychodynamic theories (although not limited to)together with the psychology of art and the creative process. Moreover, it feeds from the newly acquired knowledge about the social, spiritual and healing use of dance.

The names of Marian Chace, Trudy Schoop and Mary S. Whitehouse, are those that mark the beginning of the connection between dance as art and its application in the area of mental health, with the two first psychotic (Chance and Schoop) and neurotic (Whitehouse).

Its application is based on the idea that the body and mind are inseparable, so the movement reflects internal emotional states that may, by motion, be treated to achieve integral health.

So the therapeutic dance has two basic premises:

The movement reflects inner emotional states and changes in behavior or movement patterns may lead to changes in the psyche, promoting physical and emotional health.

Based on these two premises the dance therapist doesn't teach movements, choreographed routines or "steps", but who motivates the individual to express themselves through movement and thus discover together the communication processes, behavior patterns, defense mechanisms, emotional processes. Once discovered these processes, a world of possibilities for the individual to a comprehensive growth opens. Through his/her own body and movement discovers him/herself and has a chance to alter, change or discover, opening a channel of internal communication and also to others.

Dance therapist cares about the qualitative aspects of psychological and expressive movement while recognizes other aspects of the movement that are aimed at providing the body flexibility, tone, strength and rhythm perception among others physical aspects. It has shown remarkable benefits used in people with: behavioral disorders; emotional, neurological or social integration problems; motor disabilities, sensory, Down syndrome; brain damage, mental retardation, motor-thick and sensory disabilities; and learning disorders associated with aging processes alterations.

Its use in people with: behavioral, emotional, neurologic or social integration problems, motor or sensorial disabilities, Down syndrome; cerebral damage, intellectual, gross-motor or sensitive disability; learning disorders or changes associated with the process of aging, have proved substantial benefits.

The basic techniques in therapeutic dance are: body awareness techniques and muscle release; development of emotional expressiveness through body movement, bodywork techniques in group and individual and bodywork techniques.

A study made in 2006 at the University of Karlstad and the University of Dance in Stockholm, has demonstrated that stimulation through dance, in hyperactive children between 5 and 7 years, greatly improves their behavior and efficiency in the classroom. The study also included data on adolescents and (according to its conclusions) dance helps especially those who suffer from depression as it raises their self-esteem and improves their image to others.

In 1985, Palacios, P. in his book “ Body, sound, music and other languages” addressed that body can be a channel of language and emotions, through expression. The body receives many stimuli that assimilates and transforms their fr expression into a whole body. He states that through education we can teach to express that inner world in relation to the outside, so that benefit reaches the subject, before he/she needs expression therapeutically. He does not explicitly mentions dance but the movement closely related with the psychological motives and external stimuli.He establishes a didactic in which the subject uses the imagination and analysis of his/her emotional world as moving motor. He makes an analysis of the use of space: feeling our weight on it, the feeling of gravity. Using reference points of that space to play moving and being very aware of it because it is the projection place of our emotion.

María Fux in her book "Dance, life experience" (1981), poses to live the stimuli that inspire movement, and for this work, it is important to propose an internalized work using the imagination that leads to a personalized dance". She asserts "Our emotional state is the base of the inner rhythm that inspires movement.

At this point we could ask ourselves, what would be the effect of visualizing the image and the movement in dance and how it can affect our emotional and organic state?

The brain responds the same way in a virtual reality as it would in the real world, but not only "it is very clear that is perceiving a different reality" but "it seems that the cells that control the space change to control temporality "(Martinez L, 2015).

"The treatment protocols in virtual environments in post-stroke patients with immersive virtual training improves grip and gear. In the rehabilitation of balance and the unilateral hemineglect promising results have been obtained. There is a moderate level of evidence regarding the

effectiveness of these therapies. It has been found sensorimotor cortex activation in the injured hemisphere and the mirror neuron system during these treatments "(Bayon, 2010)

These are the results of some studies supporting theories that our brains work in a kind of conscious virtual reality that from the empirical point of view has been used since antiquity to create certain states of mood, to develop awareness and understanding or cause organically beneficial effects on our body-mind.

Emotional contagion that provides a well-structured choreography through image and movement can be a fortunate spectacle, for people who are dancing and those that are contemplating. This occurs because the "mirror neurons" that are capable of instilling pleasure to viewers through visual emotions caused by the choreography in question, while the dancers enjoy the same emotion through execution of movement.

Like when we dance in a pleasant way, we promote the release of an unusual amount of neurotransmitters (endorphins, norepinephrine, and oxytocin among others) that are responsible for this pleasant sensation. Who observes the dance and is carried away by the music spontaneously it is subject to the same physiological process, and these substances serve to decrease stress, improve the state of mood and are important for better learning.

We are immersed in a world that dances to the dervish dance that exists, the atom to the planets revolve in the universe. Dancing animals, rain, wind, also stones, trees and human beings. All dance to the sound of a mysterious melody, played in the distance by an invisible performer, as Einstein said.

When we dance we express solidarity with a cosmos inhabited by the rhythm, the geometric order and the eternal movement.

Dancing is to transcend oneself, to place oneself at the edge of the human, it means to empty oneself, to die to oneself in order to find the understanding of the mystery of life through this symbolic death of the ego. Yaluladdin Rumi wrote, back in the thirteenth century: "To be nothing is the condition required for being." Dancing is union: union of man with himself, with other human beings with the cosmos and in the end to the mystery of the divine. (Halil Bárcena, 2010)

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