

The fourth dimension between illusion and actuality in the sculptural works of the artists George Rickey and John Robinson (a comparative study)

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Introduction: -

During the modern era, artistic and philosophical tendencies have emerged, they highlight the importance of movement elements in arts, among these tendencies is the radioactive tendency. Chromaticity is performed in the form of parallel or intersecting lines of colors.

The artist did not stop discussing elements of time and space in the work of art. With the emergence of new artistic tendencies, artists continued to be exposed to elements of time and place, among these artists is the trend of futurism, futurists expressed its content in the statement issued on February 11, 1911, and it expresses the cosmic movement in its image. This movement is represented in lines, spaces and colors, and this tendency derives its roots from the theory of relativity, which revealed the temporal dimension that expresses movement and vital energy.

The response appears in the artwork, in the convexity of the lines, the curvature of the shapes, and the use of element of light with these components derived from the cosmic movement that make everything in existence move and change in a continuous process and merger situation. Also, the structural tendency that appeared in 1920 had a clear impact on value of time in artistic work, especially sculptural work, as it is a tendency to oppose naturalism, and the owners of this tendency believe that art should stay away from simulation and imitation, but rather, it must tend to install new innovative objects and forms, installation art depends on time and place as a basis for its launch, so that it is based on space, expressing space, and based on kinetic energy expressing time (Zian 1991).

Research problem

1- Can the sculptor achieve the fourth dimension, the illusory and the actual one, in one work?

Research importance: -

- 1- Emphasis on the importance of studying the different formation methods of some contemporary sculptors and what they achieve from the movement element.
- 2- The necessity of the sculptor's interest in using contemporary technology to enrich his/her sculptures.

Research objective: -

- 1- Demonstrating the importance of the sculptor's knowledge of mathematical and physical sciences to achieve the fourth dimension in sculptural work.
- 2- Shed light on the need for the sculptor to keep pace with modern technology in achieving his/her artistic ideas.

The research assumes: -

1- The research assumes that the sculptor is in continuity to develop his skills according to the requirements of his artistic ideas.

Research Methodology: -

The researcher uses the comparative analytical method.

Definition of movement and its types:

The actual movement and the delusional movement in the plastic arts are among the modern trends in the art world in general, and the movement has mentioned several definitions in different fields.

It was defined by Robert Scott in 1972 that movement means a spatial or positional change in comparison with some significant relationships (Scott 1968 AD).

Abbou 1982 (2) defined it as a series of situations, which is an essential element that drives art and the events of changes in the place caused by certain forces, which take a certain time (Abbou 1982).

There are two types of movement, the illusory movement, which in turn was a prelude to the emergence of the actual movement, and they are what we will review in the following:

The delusional movement and its scientific concept:

There are many terms synonymous with the delusional movement, such as the apparent, evaluative, implicit, and relative movement, all of which indicate one meaning in multiple forms, as "it is a movement arising from relationships of form and representational space and through the rapid rhythms of forms in space that suggest movement without actually moving or being movable through analyzing, simplifying and abstracting forms and relationships to achieve emotional, psychological and cognitive effects. The delusional movement is related to some terms such as the third dimension delusional, visual deception and sensory perception, which confirm the emergence of delusional movement (Fraj, 2014 AD).

The third dimension is delusional:

It is the embodiment that is limited to two dimensions in highlighting the visuals, length and width, and there is what is known as the illusory estimated size, which means length, width and depth on two-dimensional surfaces.

2- Optical illusion:

Optical illusions are defined as "visual aberrations, in a relatively small degree, and the deviations can be in size, shape, and direction, and movement which is called illusions because the outer lines of the drawings contain elements of the shape, but with distorted elements as a result of intentional systematic errors that lead to a different perception, which is called optical illusions or optical engineering" (Wade, 1988).

3- Sensory perception:

It means that "it is a person's ability to organize sensory stimuli received by him/her through the different senses and to process them mentally within the framework of previous experiences and to identify them and give them their meanings and different cognitive connotations."

Actual movement:

It is the characteristic enjoyed by living organisms in nature and cosmic phenomena such as wind and sun, as well as the industrial movement in its various forms that man used such as machines, vehicles and planes.” A living being, whether it is a human being, an animal or a plant, and there is a scientific concept of movement, which is “the continuous change that occurs in the position of the body in relation to the location of another body assumed by Taita, and the movement is known as (moving from one point to another in a certain time) (Yahya 2018 AD).

Power:

Force is the influence that works to change the state of a body to motion, or from motion to rest, or even from slow motion to fast motion, or from motion in one direction to motion in a different direction. A body with any force unless it is a platform of another body that transmits these forces to it with weight and magnetic force. (Feldman 1972).

Time:

It expresses the sequence of events, just as it is not possible to imagine the occurrence of a free movement of a body without taking a period of time, no matter how short it is in the final world.

The definition of the fourth dimension:

The concept of the fourth dimension lexically: Al-Khatib mentions the “Fourth Dimension” (Abbawi 2008) meaning the fourth dimension in physics, and Baalbaki referred to the term “Fourth Dimension”. As for the word “Time” which some literature considers a fourth dimension, it means: a certain point in time that crosses about it in hours, minutes, days, or months and years, and it can be read from the clock or the calendar. Succession and passage of minutes, days and years. It is a point or period that indicates an event or a specific characteristic.

Describe time and place as being after the fourth

Accordingly, it becomes clear that time and space, as experience or experience attest, are both connected and infinite, space is continuous and time is continuous in motion, and their interconnectedness and infinity are two empirical qualities and they are not like mathematical conceptions or mental abstractions, and accordingly the continuum of time and space becomes four-dimensional, since space has three dimensions. Dimensions are length, width and depth, and time has one continuous dimension without stopping, but the dimension of time does not add an external addition to the dimensions of space, and accordingly time becomes the source of movement in space, while space is the place of movement and its stage. (Al-Muati 1986)

After the researcher presented the definition of movement and its types, as well as the definition of the fourth dimension, the researcher presented the works of the sculptor George Rickey and the artist John Robinson, the subject of the research, and made a comparison between the works of each of them in terms of achieving the fourth dimension through the element of illusory movement or actual movement.

George Rickey (1907-2002)

George Rickey was born in South Bend, Indiana in 1907. He began studying at Oxford in 1926, but went to Paris in 1929 where he finished in 1930. In 1945, he made the first history-inspired mobile phones for Constructivist art, the Alexandre Calder phones. He designed his works based on the ideas of kinetic sculpture. In the 1950s and early 1960s, Rickey developed motion

systems for his grants that responded to the slightest difference in air currents. Unlike Jean Tigli of his time, all Rickey's mobiles and kinetic plastics moved without auxiliary motors instead relying on wind and gravity for his work.

Artist John Robinson (1935 - 2007)

Robinson was born in London on May 4, 1935. His father is Australian and his mother is English. He was evacuated to Australia from 1940 to 1943, where he attended Melbourne Grammar School. Upon returning to England, he entered the Rugby School, where he received prizes in engineering and sculpture. He left school at the age of 16 and joined the merchant navy, but left the navy upon his arrival in Australia. There he engaged in a wide range of activities that enabled him to explore that continent.

In the early 1970s, Robinson began the Symbolic Sculpture Universe series, which now includes over a hundred works, including sculptures in bronze, wood, stainless steel, and marble, and eleven tapestries. Selections have been shown in Leeds, Bangor, Liverpool, Wadham College Oxford, Churchill College Cambridge, London, Barcelona and Zaragoza.

Results: -

- 1- All the works of Korg Rickey achieved the illusory movement and the actual movement at the same time.
- 2- The phantom movement was realized in all of John Robinson's works, and the actual movement was realized in some of them.
- 3- The artist in general, who aims to achieve the fourth dimension in their works, can achieve this through their works.
- 4- The fourth dimension adds to the sculptures plastic elements and expressive and aesthetic values.

Recommendations:

- 1- The researcher recommends studying more about movement as an element of sculptural work.
- 2- The researcher recommends that scientific institutions specialized in arts should pay attention to providing references in this field to support researchers.

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