PalArch's Journal of Archaeology of Egypt / Egyptology

The Perfect Equilibrium of Designs Executed on Ancient Iraqi Pottery

¹Saad Hafez Obaid, ²Hadi AbbasMukheef, ³Hussein Ali Farhan ^{1, 2, 3}Babylon l Education Directorate, Babylon, Iraq Hsd922612@gmail.com

Saad Hafez Obaid, Hadi AbbasMukheef, Hussein Ali Farhan. The Perfect Equilibrium of Designs Executed on Ancient Iraqi Pottery --Palarch's Journal of Archaeology of Egypt/Egyptology 18(4), 6346-6357. ISSN 1567-214x

Keywords: aesthetic creativity, Equilibrium, pottery.

Abstract

The research problem dealt with the cognitive nature of the intellectual expansion in the systems of aesthetic creativity, and the nature of the materials taken as components of their sensory structure, within the aesthetic Equilibrium circle because it is an art of a transformation in the artistic and technical form, as well as the possibility of its openness to the neighboring rich races, and this is what called for the study of systems of change in the structure Pottery and what constitutes a new reading. What the research consists of four parts with the general framework of the research, in which the research problem and the need for it are determined. With an indication of the importance of its existence, then a definition of the goal of the research represented in the ideal Equilibrium in designs executed on ancient Iraqi pottery, followed by laying the three objective boundaries of the research, temporal and spatial after that, then defining the terms related to the title, and then presenting the theoretical framework and indicators that resulted from academic theorizing of the topic. The researchers have identified two implicit titles within this framework to ensure that the research topic is read according to its various definitional frameworks. It was as follows: the concept of ideal Equilibriumin ancient Iraqi pottery. The third chapter represents the research procedures, by revealing the studied community and the selected sample of 4 works. Then, it determines the methodology of the search tool, followed by the analysis of the sample. As for the fourth chapter, it included the results of the research, conclusions and recommendations including the acquisition of pottery shape an ideal equilibrium through space, color and line that formed an integration and visual unity for the whole scene.

1. Introduction

1.1 Research Problem

Human history is full of many artistic scenes indicating that social thought is one of the features of human communication, being art an influential factor in the formation, development and sustainability of civilizations, so it is estimated that intellectual and social art was the cause of life, as it led to the transfer of knowledge and other components of the art component, and the realization of its values civilization and the building of cultures and the design scenes that the biggest aspect of the civilization achievement could not have been for artistic dialogue to take place as a civilized approach to understanding and coexistence between civilizations and their respect for the principles of design and values of civilization, and the origin of the social relations of peoples and nations is the acquaintance and intellectual dialogue of that society.

The ancient stage of the ancient history of Iraq was associated with the image of an ambiguous and vague society, because attention was focused on the progress of society's thought in terms of the emergence and crystallization of this thought, as well as in terms of the problems it was exposed to, which led to the development of the structure of ancient societies since its inception in terms of agricultural settlements and then city-states. Then the decisive cities, where in later ages all empires or experts were subjected to the social system that man developed from himself, which are customs, traditions, and norms in specific areas in the structure of intellectual art and was linked to the living environment at that time, as the equilibrium of the ancient Iraqi thought is truly a tool for melting all the elements and components of civilization to produce.

What was known as the ancient civilization of Iraq, despite the existence of a diversity in the equilibrium fabric, the intellectual art that took place as a result of the successive waves of the ancient immigrant peoples that inhabited most regions of Iraq gained its distinctive shape that flourished since the beginning of the third millennium BC and continued in subsequent ages, forming an remarkable cultural unity. In terms of diversity in art and systems, and a commonality between the arts, it is an image of the inherited intellectual and cultural equilibrium structure of a people. Through the practice of art as well as the ideal practices that try to approach the truth, the essential existence of that life that exists within the productions of the creative artist and is full of realistic or symbolic forms in pottery and shapes with features of the environment, which prompted man to embody art and then link it to an interpretation with mythical thinking and thus art was born with the birth of the creative human being, therefore pottery was associated with myths related to the phenomena of the earth, so the artist has an outgrowth of social ideas represented in the works of art as a means of equilibrium for the artist to communicate ideas and form a sense of them, as the research problem is summarized by the following question: What are the characteristics of the ideal equilibrium in designs executed on ancient Iraqi pottery.

1. 2 Research Importance

The importance of research emerges through two axes, the first axis, the benefit of this study in identifying the ideal equilibrium in the designs of its outlet on

ancient Iraqi pottery, and the second axis is to reveal the aesthetic of the ideal equilibrium in ancient art, and this matter has an important action in supporting students of the Faculties of Fine Arts, and researchers in the field of ceramics in particular.

1.3 Research Aim

It defines the perfect equilibrium in designs executed on ancient Iraqi pottery

1.4 Research Limits

The research is determined in the study of equilibrium in ancient Iraqi pottery. The research is also determined in the artistic product in ancient Iraq, specifically (pottery art) in (5600 BC - 3500 BC).

1. 5 Defining the Terminology

Equilibrium is a state in which the opposing forces are equal or it is organizing the repetition of relations between the elements of the artwork, as these elements appear comfortable to the eye of the recipient. The procedural definition of ideal equilibrium is that it is a sense of equilibrium in a work of art that contains symmetric or identical unity in terms of a formative aesthetic, and the equilibrium is effective and the value of visual equilibrium is identical or similar in terms of equilibrium in the component elements equilibrium line, shape, color, space, direction, repetition of size and these factors affecting the recipient in the composition pottery work and to achieve aesthetic unity in it.

2. Theoretical Background

2.1 The Concept of Perfect Equilibrium

Equilibrium is one of the most important design foundations for what it achieves in terms of function and aesthetic value for formal design, as equilibrium is the state in which opposing forces are equal, as well as controlling opposing attracts by feeling the perfect equilibrium in the elements of the artwork and its fraction in form or overall and that the simplest form of equilibrium is achieved by doubling the active forces on one side (1).

On the other side of the fulcrum completely, and this equilibrium claims formal equilibrium, it is a limited means that the creation finds an identical form on the side to the other, the artist or creative person who uses it must be prepared, to equilibrium each the elements that form on one side are on the other side of the center line. Equilibrium constitutes a great role in achieving visual pleasure in the contemplation of the artistic work and its artistic elements as well as psychological comfort through the taste of its artistic and aesthetic components, and equilibrium is a feeling that circulates within the eye movement and its transfer between the components of the artwork (2). The equilibrium does not depend on the body, but on the weight resulting from the relations of the elements in the composition and the connotations of these elements and their relationships, it may be a result of the movement of lines,

their directions and their distribution, or from the color, intensity and strength of its influence in terms of weight and lightness or from the mass and its relations with space in the formation of the artwork because it has a role in the suggestion of a characteristic when forming the stereoscopic (3).

There is a specific fixed rule for finding a state of equilibrium in a work of art. It is visually perceptible from the presence of similar forces on both sides of the work of art. It is an analog equilibrium in which the right side is completely symmetric with the left side, so that one of them is a mirror image of the other, and the equilibrium is imposed itself in the artistic work does not have a variation in the pottery form, or for symmetry to be in the form of the left and right sides together, or the upper and lower sides together, with no symmetry in color, and this is a means that will diversify the equilibrium in the art form, and distribute the visual elements on both sides of the work (4).

Through this congruence the principle of ideal equilibrium will be confirmed, given that the two halves of the unit, formation, or form are either identical in an inverted form or that one complements the other, but they are in both cases and whatever it is the type of this congruence or similarity, whether in the external body or in the external designs of a form only or in the body and the details together, will result in it, especially if it is of the second type, the characteristic of repetition, given that the unit is its design inside the world (5). It is not a half-duplicate shape, adding a visual value, the perfect equilibrium in the form and exit from the artistic efforts, and this symmetrical unit is the one that is repeated in the shape, area or color, and so there will be a conflict with the principle of the necessity to achieve sovereignty in the artwork because the identical parts do not achieve the principle Sovereignty is due to the similarity and congruence between them, so there will be a struggle without one of them prevailing over the other, but if these units are repeated and confine among them different shapes from the original units, they will add to the work a variation similar to the visual perception of the recipient (6). That is, there will be a break of the consequent stalemate From this iteration the resulting vitality will act as effective visual engines that indicate new meanings and a movement full of innovation and stimulation of the characteristics of pottery design.

2. 2 Equilibrium in the Ancient Iraqi Potter

The equilibrium in pottery depends on the combination of a set of systems and laws according to which the elements operate, and these elements derive their meaning from the interconnected relationships within the product design founding first before pride and coloring in terms of equilibrium, external form (7).

There is also what is called the equilibrium that governs the production process, the transformation process that occurs at the level of the material in terms of the method of work, and what is promised is an indication that the concept of metaphor clearly affects the implicit equilibrium of this system, through which the mind collects various things that may be borrowed from the concepts of the environment the legend is to form aequilibrium in the art form (8). As for the elements that make up equilibrium are the line, the colors, the shape, the texture, the space and the mass that work together in determining the equilibrium of the pottery shape or the composition of the artwork in its general form (9). Therefore the equilibrium is divided in the ancient Iraqi pottery designs for the two main axes in clarifying the relationship of its mutual elements, and its transformations to facilitate the study of equilibrium in the designs of ancient Iraqi pottery, which are as follows:

The first axis is the equilibrium in formal designs and it shall be of human, botanical and engineering forms, while the second axis is clay material and its treatments, color equilibrium and glazing techniques.

The second axis is the transformation of the intellectual domains active in their structure and intellectual fabric has given birth to a kind of structure of difference in their meanings, techniques of outputting them and their formal characteristics, all of which is related to the concept of evolution as an inevitable phenomenon in a series of formal transformations and its course through history, expressing the transformations that the organic organism and society undergo, whether they are appropriate or inappropriate to nature.

It is certain that the formal equilibrium has responded to the nature of thought of the artist of antiquity or to the nature of the beliefs prevailing in his time, and thus the artist achieves what he deems appropriate for that belief and thought (10). Accordingly, the formal equilibrium was closely linked to thought and beliefs, and in light of these pressures on the artist, we find contrast and diversity in artistic designs in historical times, it is evident in the artistic achievement or in different stages, which makes it a utilitarian and functional product that is gradually visualized down to the aesthetic aspect, so the function is decided most of the time, and the specificity of the shape in the pottery vessels, as it reveals a long series of formal transformations, as well as presenting an idea on the development of technology in raw materials (11). Thus was the early emergence of pottery art, where it replaced many of the raw materials with clay material, so that this material would be the first technical basis and it was not technically well-treated for pottery. The site of Hassouna the discoverer puts us in front of the reality of pottery technique that indicates insufficient knowledge of pottery raw materials (12).

The old, hand-made pottery, a rough, impure clay in which there are many impurities such as flint and lime stone, iron, copper and ash compounds, but awareness of the quality of the material among the Iraqi artist led to mixing it with small minutes of straw or sand to make it more suitable for forming and for fear of explosion or its sides are cracked during the burning process, and its surface is not even and irregular (13). Its shapes are pots and jars, some of which are large with thick walls, and clay spirals are built with ropes (14). Each base is small and poorly made and has a short neck and sometimes without a neck, and the ideal equilibrium is found in the designs executed on the exterior of similar geometric shapes in the placement of the units symmetrically and in a specific way (15).

With intersecting lines and triangles, the formation of the art form is sometimes symmetrical and others asymmetric. Modified shapes such as animals, birds and fish.But it is the adornment of these pottery shapes in the manner of drawing and engraving (16). Perhaps equilibrium is achieved in designs emerging from repetition of formality in the way of engraving on pottery vessels, and where we can see here the artist's ingenuity in drafting, coherence and frankness in the equilibrium of design in the form, color and technical and making it more valid in forming models on the one hand and avoiding the sides were cracked on the other hand, so he used a light-colored clay building yellow, orange, pink and black, and the shapes were between pots, saucers and mugs, and the notices remain in all these achievements of environmental notices and sometimes religious rituals, and the state of the pottery remained with the same formal and technical equilibrium and its pictorial metaphors, in a stage with decorative designs. They were either geometric transcendent, wavy, chipped lines, triangles, lozenges, or other designs in the form of plant leaves, flowers and birds, and their shapes were of aesthetic value (17).

Often the surface of the pot is covered with a crust of the same clay that was left neither smooth nor polished, as the importance of the material lies in the construction of the pottery vessels, and the samurai product used a single color that differs according to the degree of burning. With equilibriumd and stable cylindrical bases, and on the other hand, it is distributed, with holes and different engraved triangles on the two halves of the design in a way that makes each of them obtain the same forms of strength and with different sizes and patterns of the shape in the design, and drawn in an approximate manner, such as camels, gazelles, scorpions, birds, fish, and a bull's head that was drawn in the well-known style BasimBakratium and human and plant shapes, where the artist has the responsibility to maintain equilibrium and some stability for the artist (18).

The interest in the form increased a lot, and pottery vessels became rich in formal equilibriums and their transformation to equilibrium in the abstraction of the formal, through horizontal, vertical and united lines and wavy, where the designs are clear of triangles or squares, rectangles and lozenges, and then the equilibrium of the shapes drawn on the trap pots. A vision for the pottery to be transformed into a new aesthetic vision for the recipient through designs or elaborate compositions of animal and plant shapes, the Sumerian artist being from that combination harmoniously into a collection of drawing and sculpture in the art of pottery, so that the equilibrium of Sumer pottery is an influential factor in creating a context for those works, so the drawings and sculptures varied On the pottery between the environmental elements of flowers, animals, birds, human figures, and between religious ritual dances in which the intellectual reference played a fundamental role, while the Sumerian art of pottery is the most abstract design of the Sumerian plastic arts because it is subjective in the basic construction and that would equilibrium the design with the music (19).

The deep equilibrium inherent in the structure of Sumerian pottery, what are the mechanisms of intensification and coordination of ideas according to the design of the formation, which are bases and forces full and incubating mental contents, and if the technology is no longer an expression of expression, the environment of the pottery work, then the designs of the Sumerian pottery have reached this equilibrium, such as the characteristic of industrial development and what artistic history attests in the aesthetic awareness of pottery raw materials, the mechanisms of application of techniques in the equilibrium of forms, the solutions of the machine in which pottery is made (pottery wheel) replaced the hand, and the diversity of shapes according to their ritual roles, and the processes of glazing and elaborate burning, subject these achievements.

Aesthetic transformation is constantly experimenting in equilibrium shapes and in the context of studying historical development in Iraqi pottery, the equilibrium of forms in pottery creations in the country of Sumeria can be divided into two parts, the first is the pottery statues, the second is the equilibrium, the formal designs (drawing or sculpture) on the forms of pottery utensils in the external designs, either In those pottery statues, a profound embodiment of the set of intellectual concepts spread in that social milieu, it brings us before an artistic truth. These creations have magical facts, an effective role in the perfect equilibrium. As for the artisanal mechanisms of these statues, they indicate a lack of perfection in the treatments of summer. Movement or continuous drawing is a kind of equilibrium in a formal design, so what is the intellectual structure of the pottery vessel begins with an attempt to consult the components of equilibrium. The form and challenges of interpretation are huge numbers of environmental metaphors, such as plant and animal forms, which function as symbols when they enter the pattern of art.

Accordingly, those pottery symbols and the drawings applied to them made the pottery equilibrium the focus of attention of researchers in the arts of history, the rapid superiority of those achievements and the astonishing engineering and human designs are indicative of one of the evidences that confirm the inherited authenticity of the artist Swath, which raised him above the level of their primitive contemporaries. And the shape of the pottery vessel presents us with the first designer for man to create something distinguished by its existence an aesthetic that sends satisfaction to the recipient, and through that brief review of the development of the pottery form in ancient Iraq, we find that it enjoys a degree of geometric form diversity and is based on an abstract ratio whose features determine the equilibrium and direct towards the visual mind.

The artist handled his artistic products in a manner commensurate with the concept that prevailed at that time. Through the environmental axis, we find that he has read many vocabularies that remained clear and great in his artistic achievement, such as the representation of the phenomena of nature with the symbols of the gods that refer to them and their representation, while the other side represents the religious axis, which greatly affected the Artistic production. This confirms the saying of Andre Barrow that the ancient Iraqi art is nothing but a religious aesthetic product. The art of pottery in this era lies in the completion of forms in the ideal equilibrium, and the representation of its purely aesthetic values in the organization of the formal (20).

The researchers believe that the feature of repetition in the equilibrium of general forms, partial formal units, contents, techniques and functionalities, and the means of equilibrium structural formulation, in the productions of the first roles, in which the appearance of the great similarity between the realistic achievement with a clear aesthetic, and that through the cognitive and technical transformations that extended from the first emergence the roles, to the end, which contributed to crystallizing a general atmosphere in which the elementary data for the emergence of ancient Iraqi art are consistent.

3. Data Analysis

3. 1 Research Community

The research community included the pottery works known in Iraqi and international museums, which were published in relevant books, as well as displayed on the Internet. The current research community was restricted to (25) pottery works, according to the objectivity and limits of the current research.

3. 2 Research Sample

The researchers adopted the intentional method in selecting the research sample, as it is the most appropriate way to achieve the research objectives, and the number (4) is a pottery model.

Research Tool

The researchers relied on achieving the goal of the research the intellectual indicators that emerged from the theoretical framework, as performance models in building the initial analysis tool.

Research Methodology

The researchers adopted the descriptive and analytical method, in extrapolating the research sample and analyzing it.

Model (1)

Theme: Jar

Material: Pottery

Duration: the middle of the sixth

millennium BC

Location: Old Iraq (Dour Hassouneh)

Size: 45 cm

Source: The Iraq Museum



Analysis:This model represents the shape of a large, spherical, pottery jar with a short mouth, where its body was decorated with the technique of slotting, in which the artist embodied the shape of wheat ears repeatedly around it, and this addition is part of a thought arising from the link of this model to a feature or functional purpose related to grain storage So the remains of wheat grains were found inside.

As for the desire to repeat the shape of wheat ears on the surface of this model, it was generating a kind of perfect equilibrium action that bears significance for activating the phenomenon of repetition form in the ears. In other words, the ancient Iraqi artist does not mean to crowd out the sensual meaning by adding the shape of the spike to the pottery model, appreciating what was showing the significance of the symbolic form and how it relates to the storage function. The artist also embodied the shapes of wheat ears in a way that tends to be abstract in terms of simplification and reduction of many details. That is why the artist's desire in his embodiment of the equilibrium of shapes, ears of wheat, was to achieve victory over nature by his will. The researchers also find that there is an aesthetic act that is characteristic of the repetitive units on this pottery model, as these repetitions are enhanced by the power of clarification about the ideal equilibrium on the surface of the pottery vessels in formal designs.

Model (2)

Theme: Jar

Material: Pottery

Duration: 5300 BC

Location: Ancient Iraq (the role of Samarra)

Measurement:

Source: The Iraq Museum

Analysis:This model embodies a large-sized pottery jar, executed by the artist using oxides from which after the burning process the black color produces six fields, where the first field drawn at the top of the neck of the model represents a group of abstractly executed women.

While the second field represented a repeated group of the points are distributed uniformly on all areas of the field and in an ideal equilibrium, while the artist executed on the third field a set of wavy lines and in a horizontal equilibrium, while the fourth field the artist designed a frieze. Each frieze contains a group of triangles drawn in two ways, as the first method represents the drawn triangles In a colorful way and in a shape with its base to the top and its top to the bottom, the second method represents the triangles drawn in an unpainted form and in a shape with its base down and its top to the top, the fifth field in which the artist executed a group of oval shapes, each of which was divided into three parts, while On the sixth field, the artist executed a group of triangles drawn on the sides. As for each model, it is characterized by a large body and a short neck. Hence, it is possible for us to believe in the first horizontal readers of the drawn figures full of perfect equilibrium on this pottery model and that equilibrium in the abstraction.As for the second equilibrium in geometric shapes, it is formed by repeating colored or noncolored triangles resulting from repetition. As for the state of repetition implemented by the artist on all fields, it generates an ideal equilibrium in geometric and abstract shapes.

Model (3)

Subject: Real Estate

Material: Pottery

Duration: Fifth millennium BC.

Location: Ancient Iraq (the role of Samarra)

Source: The Iraq Museum

Analysis: A pottery vessel dating back to the role of (Samarra). Inside the first circle, that is, smaller in size than the first circle, that is thus a circle around the edges of the model, which the artist filled with human bodies repeatedly and continuously and repeatedly, so that the artist fills the whole circular shape in a way that is in perfect equilibrium in a colorful and non-colored way. As for the design that the artist executed on the back of the model, it is represented by three circles, and the first circle located in the paths of the edge of the model represents the shape of the triangles continuously inside the circle, while the second body is a shape on the circle, around which there is a group of points surrounding it, and this shape is repeated inside the circle As for the last circle, it was represented by a wide black line surrounding without the model. The artist represented this ideal equilibrium due to the repetition inside and outside a circle of the model or shapes (human figures, triangles, squares and a circle) where the artist represented him in the circular shape, or a strip, so he designed it on each strip a repeated shape to obtain the perfect equilibrium within this bar.

Model (4)

Subject: Real Estate

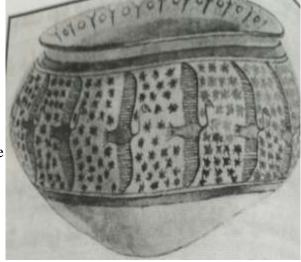
Material: Pottery

Duration: 5000 BC

Location: Old Iraq (the role of the

alliance)

Source: The Iraq Museum



Analysis: A large-sized pottery vessel dating back to the dawr (Halaf), designed by the artist and started with a frieze or a wide strip inside which a group of eagles repeating the shape, while between an eagle and the last there is a group of plant leaves scattered around the circle or the frieze densely. And it was executed by the artist using colored drawings, where the pavrez embodied an artistic design a group of birds flying in the sky and repeated around the body of the crater, and between each of the two birds there is a small circle and around it a group of points that were repeated on the surface of the frieze. The naturalness that the artist has embodied in the state of repetition

consisting of shapes (eagles, plant leaves, or points that are repeated in the crater shape, it represents an ideal equilibrium in the form in general in all friezes or circles.

4. Conclusions

1. Being the repetition in the human, human and engineering shapes formed on the surface of the pottery buildings, an ideal equilibrium in all research models.

2. The pottery shapes acquire an ideal equilibrium through space, color and line formed by the integration of the visual unity of the whole scene.

3. Body of human figures in the movement of abstract patterns, which represent the ideal equilibrium in the movement of horizontal perches of shapes, as in Fig. (2, 3).

4. The perfect equilibrium in the direction of movement gives the repetition that the artist executed on the surface of the pottery body, as in Figure (1, 2, 3).

5. The artist embodied the realistic shapes (of the eagle, its leaves, the plant, the calligraphy) to gain a state of perfect equilibrium in repetition, the shape that generates a movement in continuity as in Figure (5).

6. The artist executed the shapes on the surface of the pottery body to make it denote a specific function.

7. The natural environment imposed the introduction of natural forms in the design of the art form.

8. There is a variety of techniques according to the formal equilibrium with the external environment because it uses functional and aesthetic purposes.

9. There is diversity in homogeneity between the types of plastic art, ceramics, sculpture and painting.

References

- Ibn Manzur, Abu al-Fadl Jamal al-Din al-Ansari al-Khazraji, Lisan al-Arab, Ajeeb website.For Internet Pages, Sakhr Computer Software Company publications, 1998 AD.<u>www.arabic.ajeeb.com</u>.
- (2) Abu Dabsa, Fida Hussein: Design, Basics and Principles, Edition 1, Dar Al-Asyar Al-Alami for Publishing and Distribution, Amman, Jordan, 2010, p. 93.
- (3) Maha Ghazi Tawfiq. Forming Design Units from the Popular Heritage of Cotton Fabric, Master Thesis, University of Baghdad, College of Fine Arts, 2001, p. 167.
- (4) Al-Fayrouzabadi, Abu Taher Majd al-Din Muhammad IbnYa'qub, Al-Qamoos Al Muheet, Wonderful Internet Site, Sakhr Computer Software Company publications 1998-2002.<u>www.aeabic.ajeed.com</u>.

- (5) Ernst, Fischer, Necessity of Art, T. Asaad Halim, Cairo, The Egyptian Public Library, Books, 1971, p. 122.
- (6) Noeler, S. The Dialogue of Vision in an Introduction to the Savor of Art and the Aesthetic Experience, ed. 1, Fakhri Khalil, MR: Jabra Ibrahim Jabra, Al-Ma'moon House for Publishing and Translation, Baghdad, 1987, p. 605.
- (7) Al-Bassiouni, Mahmoud. The Secrets of Plastic Art, 1st Edition, Cairo, 1980, pg. 62.
- (8) Abdel Fattah, Riad. Training in Plastic Arts, 1st Edition, Dar Al-Nahda Al-Arabiya, Cairo, 1975, pp. 115-116.
- (9) Scott, Robert Gillam. The Basics of Design, N: Muhammad Mahmoud Yusef and Abdel-Baqi Muhammad Ibrahim, Revision by: Abdulaziz Muhammad Fahim, Presented by: Abdel MoneimHeikal, NahdetMisr Publishing House, Cairo, 1980, p. 55.
- (10) Abu Hantash, Mahmoud. Principles of Design, 1st Edition, Dar Al Baraka Publishing and Distribution, Amman, 2000, pp. 76-77.
- (11) KholoudBadrGhaith, and Mutasim Azmi Al-Karrabiya. Principles of Artistic Design, 1st Edition, Arab Society Library for Publishing and Distribution, Amman, 2008, p. 123.
- (12) Jawad Al-Zaidi. The Structure of Rhythm in Linear Formations, 1st Edn., House of General Cultural Affairs, Baghdad, 2008, p. 79.
- (13) Ismail Shawky. Art and Design, Offset Urban Press, Cairo, 1990, p.153.
- (14) Muhammad Abu Hantash: Principles of Design, 3rd Edition, Dar Al Baraka Publishing and Distribution, Amman, 2000, p. 46.
- (15) Faraj Abbou. The Science of the Elements of Art, Part 1, Dar El-Fan Publishing, Milan, Italy, 1982, p. 203.
- (16) Faraj Abboud: The Science of the Elements of Art, Part 1, Lviv Publishing House, Milan, Italy, 1982, p. 11.
- (17) Zahir Pearce: Light and Color, Dar Al-Ilm, 1979, p. 19.
- (18) Ayyad Abdul Rahman: The connotations of color in Arab-Islamic art, 1st Edition, Baghdad, 2002, p. 21.
- (19) KholoudBadrGhaith, and Mutasim Azmi Al-Karabria, Principles of Artistic Design, 1st Edition, Amman, 2008, pg. 22.
- (20) Safwat Nour Al-Din, The Potter Thin, Al-Nazaer Printing, Kuwait, 1999, p. 145.