

The Apparent Shape and Functional Variables and their Repercussions on the Aesthetic Response to the Industrial Product

Baraa Mohammed Kareem¹

Abstract

In the current paper (the apparent shape and functional variables and their repercussions on the aesthetic response to the industrial product) the researcher has tried to study the apparent variables that formed patterns that gave each design its formal characteristics to be distinguished from other industrial products. Also, these variables are considered a dividing line in the issue of the aesthetic response to the products, so the current study poses the problem of the study through the following question: What is the concept of the phenomenon and its changes in industrial product design, and what are the apparent formal and functional variables and their repercussions on the aesthetic response to industrial products?

Keywords: Design, Prevailing Norms, Aesthetics, Repercussions, Functional Variable

INTRODUCTION

The world has currently witnessed great development in various areas of life, and one of the most important of these areas is the development affected the field of designing industrial products due to the great human need for them in daily life. Nowadays, designers have become creative in the field of product development, as competition for creativity and appearance in international design exhibitions is great, which has led to an increase in creative ideas and innovative forms with apparent changes and characteristics in their aesthetic and functional value, and the increasing demand for Aesthetic shapes with the development of tastes and demand for distinctive products with clear shapes and specifications, and achieving aesthetic response, these works represent visible signs outside of the prevailing norms and breaking of traditional standards in the world of design, and this development has extended to shapes, Colors, materials, and other inputs to the design process, in addition to the change in methods and design treatments, since design is essentially a science and an art whose basics are to meet human needs and keep pace with its development, making them achievements that receive a great deal of attention, and many have shined in the world. Names of designers whose work has become visible in the world of product design. The researcher suggested taking the phenomenon in the world of product design and its reflection on aesthetic response is a topic for research discussing, shedding light, and getting to know the work of international designers and learning about their contributions in the international exhibitions.

Research problem:

Currently industrial products are witnessing a shift in the world of design. Products have appeared that have reached the level of the phenomenon with their changing characteristics through the design of the industrial product according to innovative methods characterized by excitement and surprise through the formal and functional variables of the product that transform it from the usual product into a product distinguished by difference. This product is presented in a new light and creative context for apparent variables that revolve around keeping pace with conditions of growth, technical transformation, change in public taste, rapid expansion of needs, and the need for aesthetic forms with clear in meaning and capable of aesthetic perception and response, to represent visible signs with non- prevailing norms and to break and change standards in order to obtain aesthetic forms that are different in form and in function. This highlighted the need to find an explanation for the concept of the phenomenon in the design of the industrial product and its repercussions on the aesthetic values of the product. Therefore, the research problem is crystallized by the following question:

¹ College of Fine Arts, University of Baghdad. E-mail: Baraa.hamil2104m@cofarts.uobagdad

What is the concept of the phenomenon in the design of the industrial product and what are the apparent formal and functional variables and their repercussions on the aesthetic response to industrial products?

The importance of research:

The importance of the current research is as follows

Defining a theoretical framework about the nature of the Phenomenology in general and the concept of formal and functional apparent variables in industrial product design.

The current research represents a statement of the importance of the apparent variables in the design of industrial products and their repercussions on the aesthetic response, in a way that is compatible with the evolving human needs for aesthetic and creative products, by conducting the appropriate variables.

The current research, with its scientific material, enriches the theoretical and practical aspects with a base of information for researchers and designers working in the field of design.

Research objective:

The current paper's goals are to:

Reveal the nature of the apparent variables and their repercussions on the aesthetic response to the industrial product.

Research limitations:

Objective boundaries: (the works of international designer Tom Dixon)¹

Spatial limit: (Tom Dixon's workshop - Britain – London)²

Time limit: (2022-2023)

Definition of terms:

1. Phenomenology:

It means linguistically something appeared, it became clear and appeared after it was hidden, made the thing visible, made it known to everyone: made it apparent to his enemy, made something appear ³

Terminologically it means “The combination of color, formal, arithmetic and geometric qualities”.

2. Variable:

Linguistically it means to tend to diversify and differ.

Variable in terminology: Variable is “a compound term consisting of two concepts: transformation and form, and it gives the word meanings that change the form, appearance, nature, or characteristic”.

3. Beauty

Linguistically it means beauty, he has good character, he is beautiful, and she is beautiful. He is morally good; his good morals make him beautiful. Terminologically means “an objective Phenomenology, not a subjective or temperamental one. The characteristics of beauty are independent, whether they are tasted or not. One of the philosophers of this trend is Goethe, who says that artistic creativity has laws. ⁴” Beauty philosophically: Kant pointed out that beauty “is no more than a characteristic that man gives to the beings that are being judged by beauty”.

Characteristics of the Phenomenology in industrial product design:

The term Phenomenology is a branch of knowledge

Phenomenology in the language is derived from phenomena, and it is defined in the contemporary Arabic dictionary as “phenomena, which is the science of studying sensory experience from the perspective of the individual’s awareness of it, or classifying phenomena around the concept of awareness”.⁵

Phenomenology is considered “a different path that a person determines for himself in completing a specific work that distinguishes him from others. This difference results in a communicative path.”⁶ That is, the unique styles and behavior of individuals make their work a phenomenon that can be distinguished from other design works because it is distinguished by transforming characteristics in form and functions.

In modern and contemporary thought, Phenomenology is either natural phenomena, or sensory phenomena, such as colors, smells, shapes, sizes, and so on.

Hence, a general condition has been created that makes Phenomenology a common occurrence in aesthetic works throughout history. Phenomenology in art is “a system and not a coincidence and it is perseverance and uniqueness, it attracts attention and wonders, it requires awareness, and it captures the meaning of the world, simulation, and history. From this aspect, Phenomenology merges with what it brings” “Modern ideas,”⁷ and phenomenology perception relying on perception of new thing received visually, which determines the processes of reflection.”⁸



Chart (1) explains the meaning of Phenomenology and its characteristics

Researcher's work

When observing the terms that talk about Phenomenology in design works, we find that they mean “every variable that helps reach and influence the recipient through difference, demonstration, disclosure, and apparent display,” as shown in Chart No. ⁹. It means any products designing that bears the characteristics of uniqueness, distinction, and difference through creativity in various forms performing functions with apparent variables, while ensuring that ambiguity laden with connotations does not appear, which gives the design privacy and uniqueness.

Phenomenology and its variables in the industrial product:

Several critical theories have emerged with a new spirit in dealing with the issue of Phenomenology through shape and their variables, and that “change in forms follows technical, cultural and social changes, in addition to the change in public taste. And this change must be possible to a certain degree in which the clarity and appearance of the meaning is not affected in a way that does not conflict with it with the essential meaning that requires effort and contemplation, as the shape must be characterized by some ambiguity through a change in some of its characteristics”.¹⁰

The apparent variables of industrial products are any changes that occur in the shape or functions of the product, which change “the characteristics of the product that affect the emotional evaluations of the consumer and thus his behavioral intentions. ¹¹ The products change and develop in their shape and functional Phenomenology through changes in the design systems of the products while ensuring that there is no negative impact on the functions of products of products during their lifespan to reflect changes in the needs of their users, some variables may lead to the product being unable to perform its basic function by choosing the appropriate system for those variables, by ensuring the use of “a set of highly cohesive subsystems to help as more functions are added. As a result, coupling subsystems tends to increase cohesion. Systems that do not follow change in the apparent characteristics of the product are non-evolvable systems that become progressively less useful. Therefore, it is important to ensure the quality of the design systems to ensure development and change of the product.”¹³

Shapes variables:

Shape is considered one of the most important factors of change in industrial products, as the first thing that is perceived in the shape of any product represented by the color and formal characteristics, which are “the apparent whole of anything,¹⁴” and this is based on the apparent characteristics that the shape possesses, which are flexible and subject to continuous change according to the changes occurring in the entire world. The most important of them are the technical and technological variables and their ability to provide variable and advanced shapes according to the aesthetic and functional needs of consumers. The change in shapes follows “intellectual development, the expression of individual and cultural identity, and the expression of ideas that go beyond their physical and aesthetic functions. ¹⁵” The shape variables also depend on what is imposed by the contemporary global taste for appearance of Products, colors, materials and textures that are commonly used and changed. Despite the fact that modern technology has seemingly cut off any connection with the past in modern designs, it is still necessary to learn from the past to express the surrounding environment and emulate human experiences and social and cultural identity. The shape variables are applied to different areas of life that are evolving at every moment and seeking to develop shapes that are flexible and adaptable to various variables, which is in line with this broad technical and technological change that alters at every moment. There are several concepts related to shape variables such as shape stenography, change in surface rendering, and flexibility for modification and other variables



Diagram (2) shows some shapes variables

Researcher's work

Shape stenography:

Shape stenography is considered one of the important shape variables that resulted from innovation in the design process seeking change. It is the process of sorting out some parts of a specific shape and isolating them from the rest of the parts or replacing them according to its characteristics. It is the process of “deleting parts of the shape even though its basic points remain in their positions, leading to a significant change in their effectiveness.” Perceptibility depends on the shape and area of the deleted part, as some points of the shape are strengthened and other points are weakened as a result of the angles that arise in the shape and what is caused by the changes in the lengths of the edges and the motor direction forces that each part gains. The external space plays an important role in directing attention to specific areas in the shape. Perceiving change in different ways for each case, as in Figure 16, which represents the design of a furniture unit designed by the shape stenography of some parts of the design, which has circular lines.

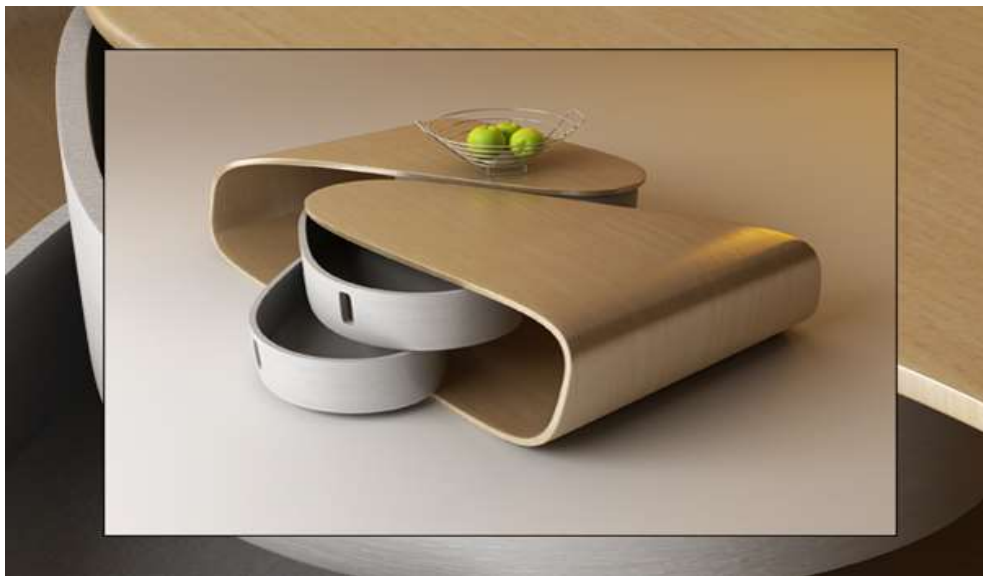


Figure (1), which represents the design of a furniture unit designed using the shape stenography method
<https://www.almrsal.com/post/46346>

Change in surface rendering

The aspect related to surface rendering is as a shape variable, this aspect is of equal importance to the composition processes, especially if it is done according to the appropriate dimensions that guarantee the achievement of aesthetic values, as the designer in this aspect intends to load the surfaces of the shape with the elements of beauty and distinction by adding variables such as various tactile colors, indicative and expressive symbols...etc.). In this process, the surfaces of the product's body and its parts are processed according to aesthetic considerations that are proportionate and the function of each part of the product's body is compatible with the final function provided by the product through the shape, color and symbolic output using design elements.” Figure 17 represents a design for a furniture unit by designer Kareem Rashid dedicated to bathrooms; its surface has been treated in a way that is different in shape and color.



Shape 2 / designing a furniture unit for bathrooms <https://mqalla.com>

Color is considered one of the most important mechanisms of surface production, as it is “part of the contemporary design space and its function, as it confirms the design of idea and embodies the aesthetics of its elements, and its color when all aesthetic factors are achieved. The color aesthetic is achieved through compatibility, and harmony. It is based on the basis of balance, proportion, repetition, etc., and the relationship of shape with color represents the most important one in product design, and diversity in color is a principle that works through juxtaposition and contrast, when the designer places different visual elements next to each other and coordinates them through color.

Flexibility for modification:

In the design process of modern design trends, shapes began to be affected by several variables, such as the emphasis on “ease of modification and flexibility, how these designs include the ability to change in the future and adapt to different variables, and how to make designs easy to adapt”.¹⁸

These variables

Also shape designers’ expectations of changes in the apparent characteristics of the industrial product, because they “give information to predict and determine whether the objectives required of the design process can be achieved.”

Functional variables:

When we address the topic of functional variables and discuss functions, we emphasize that they are the most important visible variables of the industrial product, as any change in form in its compositional characteristics must not affect the function negatively, but rather those variables must enrich the functions and achieve a state of integration between the shape and functional variables to ensure the apparent characteristics of the variables. Functionalism is “an interpretation of the concept of action and reaction or cause and effect and thus the whole-part relationships is achieved.” Functional variables emerge through the goal of product design primarily because it ensures the production of products that perform a specific function as an art that performs four basic tasks, which are (utilitarian, performance, and use), even if they differ or they met each other only because they work under the umbrella of beauty. Functional variables are achieved by ensuring three basic elements, which are utility, durability, and beauty. Together, these elements represent movement towards positive change

and advancement to what meets human demands and needs, and then positive participation in progress and development is achieved and the beginning of change lies in the convergence of approaches to the seriousness of bringing about change.

The variables related to the term use are also of great importance in the apparent characteristics of products, and that “use is an activity with experiential value. It makes a thing a means, which is then placed in the relationship of means and purpose, and it can also create an aesthetic experience that is not devoid of benefit. 20 There are also several related concepts with functional variables such as job multiplicity, functional intensification, and other variables



Diagram (3) shows some functional variables

Researcher's work

Functional versatility

With today's high-speed technological development, design is one of the fields most affected by this development, which has witnessed a major change in the shapes and functions of products with the change in life, human needs and means of living, and the changes in cultures and environments around it. Multifunctional products that perform more than one function in one shape have emerged and developed, thus achieving versatility in the type of functions in one product by studying physical properties of the materials used in the design, the functions expected to be performed, and the suitability of the appropriate shape to accommodate those functions. Thus “the design appears in more than one form because it contains more than one function, meaning a shape for each function, and there is no doubt that a design with this feature has a kind of complexity, overlap, and sharing of parts and elements,” as in Figure 21, which represents a design for multi-functional bedroom furniture.



Figure (3) Bedroom design with functional variables

<https://design-milk.com/tag/roche-bobois/>

That is, today's products perform an increasing number of functions that are usually performed by more than one product, which leads to special design treatments for the shape and appearance of the product. Accordingly, this multiplicity does not lead to an undesirable increase, for example, in the weight and size of the product and thus affecting the quality of the product. One way to confront these challenges to achieve the apparent variables lies in studying concepts of multi-functionality that ensures reducing the complexity of the design and applying this approach so that changes are made to the components of form and appearance to ensure that functions are performed to the fullest extent.

Functional intensification:

Functional intensification: It is considered one of the functional variables of the industrial product, which occurs through change in "the overall assembly processes of the elements or units of the composition that are concerned with enriching the design component, both at the level of the formal and functional structure, without causing confusion, as it is a technical and demonstrative act that contributes to activating the movement of the public space of the design." ", as in Figure 22, which represents a design for a phone, which performs the communication function, which is the basic function of phones. The functions have changed and developed therein with the passage of time and the great technical change that occurred in the design systems of mobile phones by greatly condensing the functional units therein, as each button capable of performing different tasks.

So, screens that rely on touch perform the tasks of buttons through which the various functions provided by the device are accessed. All of this is done through a specific system for organizing the functional parts and making them an integrated and unified whole, which led to "adding a degree of excitement to the design due to the diversity of the units, relationships, processors, and component vocabulary to function and demonstrate multiple systems with strong connections"

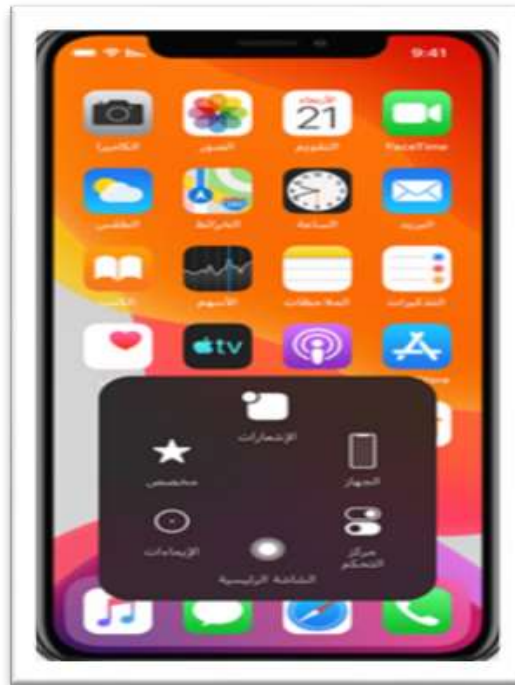


Figure (4): A modern iPhone in its design that relies on touch to receive commands for operation

<https://support.apple.com/ar-jo/HT207122>

Functional Enrichment:

Functional enrichment means changing the function of the product through developing its basic function as a result of the complexity of society's needs, which led to the complexity of functions and thus the complexity of the design function. Industrial products at the present time are always taken into account to have multiple benefits that are compatible with human needs and demands without extravagance to the point that it is often what are described as functional designs.

Aesthetic response to the apparent variables of the industrial product:

Perceiving the beauty of design works in general and industrial products in particular and responding to it depends on many factors that characterize them, the most important of which is "the proportion and harmony of the components or the specifications and quantities of the phenomena in the thing and thus distinguishing them by what is functional and utilitarian therein, and its aesthetics," as it is based on shape variables "transmitting the idea through the artistic vision and the process of transforming characteristics into aesthetic impressions and data, "and that all apparent characteristics in an industrial product can be of aesthetic effects" that motivate modifications to the shape to bring it to the stage of aesthetic response. Provided that these aesthetic values are compatible with the material from which the product is made, and compatible with the nature of the service it provides, such as choosing the appropriate apparent characteristics, the nature of the product, the nature of the purpose it serves, and the environment in which it will be used, as well as its role and impact in achieving the aesthetic response, as the shape analysis of the apparent variables focuses on "the characteristics of the product that affect aesthetic responses such as size, color, composition and shape.

Creativity in designing products that are apparent in their characteristics also has an impact on achieving aesthetic response through the designer's choice of shapes for products characterized by modernity and distinction that affect the mental experiences responsible for visual perception, as they form a strong background for discrimination, which in turn affects the components of the sensory form that constitutes the

visual experience. In addition, visual perception of apparent forms distinguishes between their information and absorbs, represents, organizes and integrates it into his cognitive structure, harmonizes it with his previous experiences and transforms them into acquired experiences that are meaningful to him”.

The aesthetic response depends on the expression of the relationships among the apparent parts of the product, which are metaphors from other forms and which depend on perception and intuition in translating them as to reach to an aesthetic judgment or evaluation.

Theoretical framework indicators:

1. The variables appearing in the design mean every variable that helps to achieve the characteristics of the phenomenon represented in the shape of industrial product bodies bearing the characteristics of uniqueness and distinction. These are determined through the idea resulting from creativity, the changing shape, the addition of aesthetic and functional values, and the change imposed by those values in terms of area, size, and dimensions that define the special identity for the product.
2. The change in shapes follows intellectual and cultural development, the change in public taste, the expression of individual identity, and the expression of ideas by forming shapes that bear apparent characteristics in their material and aesthetic functions. These changes occur through several treatments and changes to the shape, such as shape reduction, excellence in surface rendering, modification, and flexibility.
3. The shape variables depend on what contemporary global taste imposes on the appearance of products, and the colors, materials, and textures that are commonly used and changed.
4. Functional variables are considered among the most important variables that ensure access to the characteristics of the phenomenon in product design by ensuring positive change in (utility, performance, and usability) while ensuring that the aesthetic value of the product is not affected through, for example, functional multiplicity, functional intensification, and functional enrichment.
- 5- The apparent variables have an impact on achieving the aesthetic response through the characteristics of the product, which represent changes in the components of the sensory appearance, to bring it to the stage of perceiving and responding to those variables.

METHODOLOGY

The researcher adopted the descriptive approach (*) content analysis in analyzing the models, due to its suitability to the topic of the current study, as it provides the possibility of criticism and analysis procedures in order to achieve the goal of the research.

Research community:

The current research community consists of designs for furniture units designed by international designer Tom Dixon, published on the Tomdixonstudio page on the Internet, and designed between the years (2022-2023), amounting to 5 designs.

Research sample:

The researcher has adopted the intentional selection according to the research requirements, and adopted a percentage of (60 percent) that was applied to the year (2022-2023) of the research population. The number extracted from the samples was (3) samples out of the research population of (5) models. The models were chosen as samples for analysis, and the researcher chose the designs that represented the results of the search on the Internet according to the following justifications:

1. The multi- apparent variables and different designs of the selected products.
 2. The suitability of the models to the general research orientation and their representation of the entire research community.
1. Search tool- :

To achieve the goal of the research, a shape was designed to identify the axes (*) of the analysis based on the indicators of the theoretical framework.

Reliability of the tool- :

The reliability of the analysis tool was confirmed after presenting it to a number of experts* with precise specialization and specialists in scientific research methods before applying it. A consensus was reached on the reliability of its vocabulary after making modifications and observations, and thus it gained its apparent validity from a research standpoint.



Model Analysis (1)
Model description- Design: Center tables
Designer: Tom Dixon
Material: natural alabaster stone

1. Variables appearing in product design:

The design represents center tables designed from natural stone by international designer Tom Dixon, whose designs are distinguished by their apparent characteristics through the change in shape and functional characteristics, adding to them the features of difference, uniqueness and distinction in their values and functional and formal characteristics.

2. Shape variables:

The shape variables were achieved in the model through several characteristics that the designer added to the shape of the table. He used geometric shapes stacked on top of each other to form the entire shape. It is distinguished by its large weight, which is considered a variable pattern in the design of tables. Its surface appearance, according to the designer's description of the model, is characterized by soft texture, natural materials, and the use of colors. Different designs were used to show the aesthetic value of the design. The shape reduction of some parts of the tables was also achieved by replacing some parts represented by the basic bases of the table with different geometric shapes with a distinct shape organization of the apparent variables of the model.

The Apparent Shape and Functional Variables

3. Functional variables:

The table achieved functional variables through the designer following the approach of simplicity in organizing the parts of the product, which made it represent a functional sculpture that provides a clear benefit when used. However, the weight did not achieve the required functional performance due to the difficulty of moving it or using it in different places. The various geometric shapes were organized to form the shape completely enriching the design component at the level of formal and functional structure with simplicity and clarity of shape without causing confusion, which contributed to activating the movement of the public space of the design.

4. Aesthetic response to the apparent variables of the industrial product:

The model achieved aesthetic response through the creativity of designer Tom Dixon and his permanent and continuous ability to create shapes with apparent characteristics that, with their aesthetic and functional values, have become apparent in the field of design, where he focused in his design work on exploiting the material, natural materials, colors and their aesthetics in creative designs in their characteristics and the distinction and uniqueness they contain without variables. Traditionally, the products in the model are characterized by ease of understanding and perception, which ensures the aesthetic response to the design in addition to the advanced lifestyle, in addition to supporting the product with the appropriate mechanism functionally and aesthetically to establish a balanced system characterized by difference, distinction and aesthetics.



Model 2 / Analysis

Model description

Design: Lighting units with a rest unit

Designer: Tomdixonstudio

Material: Copper, wood and wool for upholstery

Variables apparent in product design:

The design represents lighting units designed from coated stainless steel, with a rest unit designed from natural wood, designed by international designer Tom Dixon, whose designs are distinguished by their apparent

characteristics through the change in shape and functional characteristics, adding to them the features of difference, uniqueness, and distinction in their apparent values and characteristics.

Shape variables:

The shape variables were achieved in the model through several characteristics that the designer added to the shape of the lighting units. He used three completely variable shapes, which are considered a variable pattern in the design of the lighting units. Designer Tom Dixon's designs are considered a phenomenon in the world of design, as he possesses the creative imagination to create shapes with apparent characteristics and variables for his designs, as is surface appearance, according to the designer's description of the model, was distinguished by its soft texture, natural material, and the use of black color to show the aesthetic value of the design. The shape of the rest unit also achieved apparent changes through the shape reduction of some parts of the rest unit, represented by its design with only two parts, without apparent rules in its shape, which achieved the apparent characteristics of the product .

Functional variables:

The lighting units achieved functional variables by organizing their parts in a way that directs the lighting and distributes it in an excellent way, which made them add aesthetic value in addition to functional performance with clear benefit when used. The rest unit also achieved utility and functional performance through its apparent variables that enriched the shape with appropriate dimensions for user comfort.

Aesthetic response to the apparent variables of the industrial product:

The aesthetic response was achieved from the first sight of the design. The design is characterized by apparent variables that make it suitable with the fast and sophisticated nature of life. It has an aesthetic appearance due to the totality of the designs represented by the lighting units, the rest unit, and the apparent variables in their traditional forms, which translated the meaning of aesthetics, development in specifications, and creativity in change in the previous shapes and creating a new design by adopting characteristics with additional designs to achieve aesthetic value.



Model 3 analysis
Designer: Tom Dixon
Material: crystalized glass

The Apparent Shape and Functional Variables

Variables appearing in product design:

The design represents a vertical lighting unit made of glass by international designer Tom Dixon, whose designs for lighting units in their various shapes are distinguished by apparent variables through their shape and functional characteristics and the design treatments of the unit as a whole.

Shape variables:

In the model called (MELT Family), the shape variables were achieved through several variables adopted by designer Tom Dixon. He used the method of simulating celestial bodies, according to the designer's description, in different sizes to create the shape and achieve an unusual level of lighting arrangement. Glass material was also used in the design of the basic structure that holds the lighting crystals. The main base of the unit is also composed of a large crystal of glass, and the designer's creativity is concentrated in this treatment on achieving balance in choosing the size and weight of the total parts of the unit to make the base bear it.

Functional variables:

The model achieved functional variables by the designer when he organized the parts of the unit in a way that reflects a high degree of reflection and ensuring perfect reflection during the day, according to the designer's description of the functional performance of the unit on his official account. When it is turned on, it reveals a large number of internal reflections from the lamps inside the bottles, which make it provide a clear benefit when used.

Aesthetic response to the apparent variables of the industrial product:

The model achieved an aesthetic response to the apparent variables through the creativity of designer Tom Dixon in shaping the parts of the glass unit in the form of a mirror that becomes transparent when illuminated or displayed only in full daylight, which gives the place aesthetic value. Its unique final shape and complex patterns were also created in an innovative way that achieves strangeness and questioning of the entire shape, which is designed from crystal glass, including the base, and the aesthetic response was achieved by imitating the aesthetics of nature, in addition to supporting the product with outstanding functional performance.

RESULT AND FINDINGS

The analyzed models have been achieved by designer Tom Dixon with their design characteristics, the apparent design features of uniqueness, difference, and distinction through changes in shape and functional characteristics, adding aesthetic and performance features to them.

The shape variables were achieved through several characteristics that the designer added to the shape by using geometric shapes stacked on top of each other as a creative idea with the help of the natural material and its aesthetics, as in Model No. (1), at a rate of 33 percent.

The variables in weight did not usually achieve the functional performance required in such a design, which made the ability to move it to different places difficult for the user, as in Model No. (1), by 33 percent.

The functional variables were achieved through shape reduction, which enriched the innovative shape with appropriate dimensions for user comfort, by 33 percent.

The shape and functional variables were achieved by using a simulation of nature represented by celestial bodies of different sizes to create the shape and to achieve a level of arrangement of lighting, which ensures distinct functional performance, as in Model No. 3, at a rate of 33 percent.

The models achieved aesthetic response through the creativity of designer Tom Dixon and his permanent and continuous ability to create simple aesthetic designs that are easy to understand due to their apparent variables. In his design work, he focused on his exploitation of natural materials and their characteristics of simplicity and beauty, in addition to exploiting colors and their aesthetics in his designs, as in all models.

CONCLUSION

In light of the research results, the following conclusions were reached:

The modern era is characterized by the diversity of variables appearing in industrial products, which is in dire need of difference and continuous change, which is a natural characteristic of development and creativity. The phenomenon in the design of industrial products is determined by the designer's ability to highlight the product's identity, which is determined by the designer's ability to make appropriate variables in the shape and function of the product in a way that achieves distinction and difference from traditional products while ensuring that the design carries clear connotations that facilitate the perception of those variables. It guarantees a response. Some of the apparent variables may lead to the product being unable to perform its basic function, either due to not choosing the appropriate system for those variables, or the complexity of the shapes to the point of not understanding their basic function, which leads to difficulty in understanding their identity.

The apparent variables of the industrial product depend on several concepts related to shape variables, such as shape reduction, change in surface release, and flexibility for modification, in addition to functional variables that depend on functional multiplicity, densification, functional enrichment, and other variables. The apparent variables are related to the cognitive processes of the product's identity, which is determined by conveying and communicating clear information about the product in a symbolic and aesthetic way.

RECOMMENDATIONS

After completing the results and conclusions, the researcher recommends the following:

Updating programs and courses concerned with the cognitive development of designers in the field of identifying the apparent variables of the industrial product. Access to the latest products of international designers of industrial products through constant follow-up of international exhibitions that take place in countries around the world so that the designer is fully aware of and aware of the apparent variables of industrial products. Using modern and advanced methods, means and technologies that guarantee products characterized by distinct apparent variables.

REFERENCES

Arabic sources

- Ibn Manzur, Jamal al-Din bin Makram al-Ansari, Lisan al-Arab, vol. 8, Egyptian Foundation for Writing, News and Publishing, Egyptian House for Writing and Translation, Cairo.
- Ismail Abdel Fattah Abdel Kafi, Terms of the Age of Globalization, Arabic-English, Cultural Publishing House, Cairo, first edition, 2007.
- Ihab Al-Saifi, Aesthetic and Structural Foundations of Design, The Egyptian Book, 1992.
- Al-Badrani, Jamal Salem, Building a Self-Confidence Scale for Middle School Students, Master's, Baghdad, 2008.
- Jassim Khazal Bhil, The appearance of the industrial product and its role in user preferences, The Academy / Issue No. 52 of 2009.
- Hassan Mohamed Attia, Arts Criticism from Classicism to the Postmodern Era, Cairo, 2001.
- Rawya Abdel Moneim Abbas, Aesthetic Values, University Knowledge House, Alexandria, Egypt, 1987
- Zakaria Ibrahim: (The Problem of Art), Modern Printing House, Cairo, d.d.,
- Samir Nouri Shehab, mobile phone design variables and their relationship to technical development, unpublished Master's Thesis, University of Baghdad 2007
- Charles Malek, The Introduction (A Philosophical Biography), Dar Al-Nahar Publishing, 2001
- Shaker Abdel Hamid, Aesthetic Preference, Al-Watan Press, Kuwait, 2001
- Abdul Qaher Al-Jurjani, Secrets of Rhetoric, Abdul Hamid Hindawi, 1st edition, Dar Al-Kutub Al-Ilmiyya, Beirut, 2001.
- Amr, Kayed, The role of direct visual experience through drawn models in developing the artistic performance of seven-year-old children, Journal of Seventh Studies, Volume 28, Issue 1 2001.
- Muhammad Bahdoud, Philosophy of Art, Questions of Aestheticism and Art in a Changing World, Lines and Shadows for Publishing and Distribution, Jordan, Amman, 2021.
- Al-Muqdad, Fanan Hamoudi, Color Harmonies with Architecture and Design, Al-Hiwar Al-Mutamaddin, Issue No. 3144, 2010.
- The Nomenclology of the Mystical Revelation of Time by Edmund Husserl, translated by Lotfy Khairallah, Al-Jamal Publications, first edition, 2009, p. 8 - Walid Qassab, Al-Dhahirah fi Al-Adab, 1st edition, Dar Al-Qalam, Dubai. 2001

Foreign Sources

- Branko Kolarevic, *Simplexity (and Complicity) in Architecture*, University of Calgary ,2016.
- Gmytrasiewicz, P., & Lisetti, C. *Emotions and personality in agent design* Proceedings of the first international joint conference on Autonomous agents and multiagent systems: part 1, Bologna, Italy.2002.
- Jakob Nielsen ,What Is Usability? usability and user experience ,part1,2010.
- John Hendrix, ,The Dialectics of Form and Functionin Architectural Aesthetics», *Rivista di estetica* 2015, online dal 01 avril 2015.
- Marijn Kampf , What is usable is usable, Master Thesis Information Science, Utrecht University, 2004.
- Philippe POUTIGNAT et Jocelyne STREIFF-FENART. *Theories*. Editions PUF. Paris 1995
- Spish, W. *The Meaning of Art*. translated by Abdulfatah, E. Cairo,2000.
- Williams, B. J. and Carver, J. CCharacterizing software architecture changes: A systematic review. *Inf. Softw. Technol.*2010.
<https://www.almaany.com/ar/dict/ar-ar/%D9%85%D8%AA%D8%BA%D9%8A%D8%B1->