

# The Influence of Science and Technology on the Development of Art and Design

Haoyuan Guo<sup>1, a</sup>

<sup>1</sup>North China University of Technology, Art and Architecture School, China.

<sup>a</sup>crazholy@outlook.com

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**Abstract:** The progress of science and technology has brought us abundant material resources, and people have brought human wisdom into play by using or enjoying these material resources to make more designs possible. The position of science and technology in the field of design is becoming more and more important, and it leads the development of design. Learning to apply advanced science and technology to the field of modern design is something worthy of study by every designer.

**Keywords:** Science and technology, Development, Design.

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## 1. Introduction

The development of science and technology has brought great changes to our lives, and it allows people to enjoy richer resources in their daily lives. And design is the carrier of these resources, which makes people feel the benefits brought by science and technology more intuitively. At the same time, the development of science and technology also needs design as a carrier, and this interdependence has never stopped, especially in today's rapid development of science and technology, the importance of science and technology to design has become more obvious.

## 2. Science and Technology and Art Design

Science and technology have brought mankind into a new era, and the development of design has made this era more colorful. As the two wings of human culture, science and art have been exploring the relationship between them. The meaning of science and art is explained in the Dictionary: "science" refers to the use of categories, theorems, laws and other forms of thinking to reflect the nature and laws of various phenomena in the real world knowledge system; "art" refers to the human emotion and imagination as a special way to grasp the world. A special way of grasping the world, characterized by emotion and imagination. That is, through aesthetic creative activities to reproduce reality and express the emotional ideal, in the imagination to achieve the mutual objectification of the aesthetic subject and aesthetic object. In other words, science is the knowledge system of human beings to understand nature, society and human beings' own physiology, psychology and thinking, and the pursuit of such knowledge is usually characterized by rationality. While art is the expression and creation of aesthetic forms of human emotion and imagination, it usually has the characteristics of sensuality. The famous painter Wu Guanzhong said: "Science reveals the mystery of the universe, and art reveals the mystery of emotion."

Science is the technical basis of art. The relationship between the two should be the relationship between the foundation and the ontology. There is a combination of foundation and ontology, the combination of technical foundation and aesthetic expression, is a prerequisite for the

success of artistic creation. With the development of science and technology, the birth of new materials often brings more possibilities for design, such as the emergence of reinforced concrete to enable the design of high-rise buildings; the invention of the glass liner to achieve the design of insulation cups; the birth of nanomaterials to achieve the design of high-pressure resistant clothing; the discovery of light-sensitive materials led to the introduction of various types of cameras; the birth of plastic to make the telephone, hair dryers, office appliances and a variety of The birth of plastics has led to the design of telephones, hair dryers, office appliances and various containers that are widely used in people's lives. It is easy to see that the birth of new materials has provided designers with richer realistic materials to support their new exploration.

The development of visual communication technology has also enriched the field of visual expression. The invention of printing, for example, is a glorious chapter in the history of human civilization, and the mass production of printed books has greatly increased the chances of keeping books and facilitated the spread of culture. On the basis of photography, after nearly 60 years of exploration, the Lumière brothers' invention, film, was realized, which then led to the emergence of a new medium, television. The birth and development of these new visual communication media not only diversified the ways of information dissemination, but also accelerated the speed of access to information and enriched people's visual needs.

The innovation of information technology is of epochal significance to the way society produces and designs. Emerging information technology has revolutionized the way designers work, and the use of computers is the most typical example, which has played a huge role in various design production processes. Its powerful database can quickly calculate the design parameters and can provide design drawings and related documentation at the first time, making the design method more convenient and flexible; the computer also enables designers to work more intuitively and be able to focus on the design effect at any time, which expands the freedom of design and saves some time; designers can understand people's material and spiritual needs well through the computer, making The designed works are more rational and humanized. This was closely followed by the invention of various software to support design, such as

CAD, Photoshop, Figma, and other software that encouraged designers to explore. In addition, the popularity of wireless networks has further solidified the creative position of computer technology in the design field.

### **3. Technological Progress Has Increased People's Pursuit of Aesthetic Level**

From the primitive society, people have never stopped aspiring for a better life, from the primitive society of mankind by punching holes in tools as decoration to today we must spend a few minutes before going to work with the dress to decorate themselves, all prove that good design, will make people feel comfortable, happy, happy, full of hope, will make people's emotional world more colorful, as the Japanese designer Kenya Hara in the "design of design As Japanese designer Kenya Hara said in the book "Design in Design": "The so-called design is to know the world we live in through creation and communication. Good understanding and discovery will make us feel joyful and proud." It is evident that people are demanding more and more from product design, not only to achieve perfect functionality, but also to have richer and richer artistic content in design to cater to their emotional needs. Therefore, when design solves the technical problems and practical functions of design works through science and technology, art becomes the object of its pursuit. What is the force driving design's obsessive pursuit of art? Human needs. With the development of science and technology, people's material resources are so abundant today that the goal of human life is no longer simply to solve the problem of food and clothing, thus there is a further development, hoping to have material needs and at the same time enjoy the spiritual world.

It is the progress of science and technology that makes today's design full of infinite possibilities and enriches the artistic content of design, and the new technology makes it cover almost all artistic expressions, such as line, form, color, texture, light, space, etc. The use of streamline shape is a typical example. This streamline shape was later applied to the design of Coca-Cola bottles by a French designer named Raymond Loewy, which made a big wave in the design field. After that, the streamline shape was widely used in people's life, such as large to airplanes, cars, small to water cups, beverage bottles, lighters, etc., so that people's life is full of imagination; Kaj Franck, a famous Finnish industrial designer, cleverly used the change of color in tableware design, and the post-World War II Scandinavia made steel materials instead of silver materials used in tableware design, and mixed with various materials of tableware. Frank designed the "people-oriented" design concept of "informal dining" tableware, giving it a variety of colors, including white, black, green, yellow, purple, etc., people can combine and match these tableware according to their color preferences when dining. This design has changed the way people used to eat, using meals become easy, fun, very suitable for modern life; In addition, the world's best-selling orange squeezer is also a classic, although the practicality is not strong but still selling, many people buy home in the most show-off place, and appreciate its stainless steel under the sci-fi appearance, it can be seen that it has become a symbol of taste; these excellent designs are to be realized through Science and technology to achieve. The progress of science and technology to make people's lives become more quality, thus driving the progress

of civilization.

### **4. Innovation and Change of Art and Design in the Development of Science and Technology**

From the development history of art and design, the integration of science and technology and art and design has inevitability. It is the inherent requirement of both science and technology and art and design. The integration of science and technology and art and design is one of the inevitable trends in the development of art and design in the 21st century. In the process of development of science and technology, the artistry and aesthetics of art and design should be used, and art and design cannot be separated from science and technology, and the creation process of art and design should be guided and used by scientific theories and principles. Designers need to closely combine art and science, not only in the use of materials, but also from the product shape, expression and other aspects, multi-dimensional comprehensive consideration. The development of science and technology is the inexhaustible driving force and source of social development, and only when modern science and technology are integrated with art and design is the future development trend.

With the approach of global economic integration, international communication media and the explosion of various information, the original unchanging monotonous design approach has been impacted by the diversified needs of people. The new generation of people seeking for newness and change has provided unprecedented options for the development of design in this period. In particular, the adjustment in the importance of design responsibility resulted in the emergence of various new designs based on traditional designs. At the same time, due to the great material abundance and the significant increase in consumption levels, people's needs for spirituality have also changed. Young people have lost the ideals and standards of the past, and their attitude towards visual communication design is no longer about satisfying basic functions and attributes, but more about being more personalized and paying more attention to the psychological needs of themselves. This also leads to another aspect of the future development trend of visual communication design, which is more profound in terms of expression content and message conveyed, and more concerned about the common problems faced by human beings.

Faced with the new era of the Internet and digital civilization, art and design are facing a great challenge. People expect art and design to meet more needs in the environment of new art, new technology, new tools and new space, not only in terms of access to information, but also in spiritual and psychological aspects. As a designer, our role also changes from a worker or a draughtsman to a director who must have the ability to synthesize all kinds of knowledge, awareness and sensibility to be able to reconstruct human characteristics, information space and environmental space. Having a strong ability of perceptual expression and a creative vitality that transcends everything is the future direction of art and design.

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