

ISCKMC 2020**International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»****THEORETICAL ASPECT OF AESTHETIC AND ERGONOMIC
DESIGN PROPERTIES OF MASS CONSUMPTION ITEMS**

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Abstract

This paper presents theoretical aspects of influence that aesthetics and ergonomics exert onto design of mass production items. Manufacture of mass produced items is based on a complex interaction between product engineer, design engineer and industrial designer. Their activity is primarily concerned with aesthetic and ergonomic function of the product, making the mass produced item attractive for a consumer. By creating and producing necessary items, a person creates object world and surrounding object environment, calling into existence the necessary conditions of one's safe existence and living. This study analyzes a role of design in development of the object world of a modern person. It describes the principal theoretical aspects of industrial designer activities during development of a mass produced product. In the modern societal system, mass produced products are usually considered as projects, as products of manufacture, as items of goods and as consumer items. Industrial design is concerned with designing, creating and producing things that are manufactured by the industry with considerations for their beauty, convenience of use and utility for a modern person. Industrial designer is a creative profession, it helps developing customer appreciation by means of creating items with pronounced aesthetic factor and aspiration for structural and functional perfection. Designing mass produced items requires taking into considerations the ergonomic requirements to the item, determined by properties of humans and their needs, set up with the aim of optimizing human activity.

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1. Introduction

At the modern stage of development of design, mutual intersection and penetration of aesthetics and ergonomics takes up a special place. They influence design and production of modern mass consumption items. Manufacture of mass consumption items is impossible without involvement of product engineer, design engineer and industrial designer. Their activity is primarily concerned with aesthetic and ergonomic function of the product, making the mass produced item attractive for a consumer (Runge, 2001). Development of design and its functioning in the modern world is multifaceted. It is formed from various integration processes related to changes in object environment, industrial development and development of consumption, market formation with its social functions, human development and development of self-comprehension, development of engineering, philosophical, artistic, architectural, scientific worldview, thanks to which design has become a socially and culturally significant phenomenon (Runge, 2005).

2. Problem Statement

What is the role of aesthetic and ergonomic properties in design of items for mass consumption? The problem statement reflects a contradiction between commerce that determines the demand for mass produced items, development of product range with considerations for consumer wishes and a structural link of aesthetics and ergonomics in development of design project of justified and technologically feasible mass production items. There is a contradiction related to production, consumption sphere and consumer culture, limiting designer's work (Minervin, 2005). The contradiction is between unification of mass produced items and a product of industrial design that may be not only an item developed on the basis of analysis of consumer values but first-of-a-kind items infused with aesthetic concepts of style and beauty and forms the customer's aesthetic taste.

3. Research Questions

When turning to the development history of human forms of activity we may see that design has its roots in a constant differentiation of activities. From historical processes we understand that design as a field of activity arises thanks to changing structures of the four big areas of human activities: science, engineering, architecture and art, their crossover and integration. These changes start during the Renaissance and continues up to the late 18th century, when design starts its development. Increasing independence and establishing of the spheres of human activities mentioned above lead to a synthesis between sciences. Thus, artists come to industry in order to make its products more aesthetically pleasing. Industry needed artists, their input was needed in order to create industrial products akin to the works of art (Radaev, 2005).

Synthesis of engineers and industrialists, artists and architects, science and technology formed a foundation for new concepts, ideals and objectives of industrial mass production. Manufacture of mass production items is related to the concept of objects. By creating and producing necessary things, a person creates object world and surrounding object environment, forming the necessary conditions of one's safe existence and and living. Humanity cannot exist without things and things cannot function without

humans. A thing gets its reality only as a product of manufacturing, that is, it becomes a material object intended for consumption. Consumption ends the act of production, transforming the product into a means of consumption. By manufacturing things and ways of their consumption, production creates the consumer themselves, forming their taste, wishes and needs (Genisaretskii & Bizunova, 2004).

Industrial designer creates items having aesthetic value on the foundation of laws of beauty and functionality of the item. In the modern societal system, mass produced products are usually considered as projects, as a product of manufacture, as an item of goods and as a consumer item. Modern industrial design is concerned with designing, creating and production of things that are produced by the industry with considerations for their beauty, convenience of use and utility for a human. Designing mass produced items requires taking into considerations the ergonomic requirements to the item, determined by properties of humans and set up with the aim of optimizing human activity. Ergonomic requirements include a necessary level of qualities that the item shall get during the development (Agranovich-Ponomareva, 2009). The product of design and a result of designer activity in the concept of artistic design is usually understood as industrial items designed or modified in accordance with the requirements of technical aesthetics. Thus, the products of artistic design are items of mass consumption that are manufactured in accordance with the complex ergonomic requirements, take into account the aesthetic factor, aim at structural and functional perfection, attaining optimal state at the crossing of market requirements and consumer wishes. For instance, production of a bottle of drinking water starts from sociological and marketing surveys that study the lifestyle, tastes and needs of customers. Basing on the obtained data, the designer visualizes and creates a concept of the future mass produced item. Commerce determines demand for mass consumption items and develops the range of industrial goods taking customer wishes into account. It shall facilitate fast sale of items in accordance with the planned amounts and satisfaction of customer needs according to the quality and advantages of produced items. If produced items are discovered to have disadvantages, a need arises to design and produce new items. There is however another feedback that limits designer's work, it is coming from manufacture, consumption and culture. Let us consider its features. The statement that the items resulting from designer's work shall be of high quality is not quite correct. The very term *quality* assumes absolute parameters. In product design, these parameters may change due to changes of designer task in designing various mass consumption items. Often, a designer shall perform the work on demand coming from manufacture and customers. Studies of ergonomic functions result in common standards and unification of mass consumption products. However, the result of product design may be not only things developed on the basis of analysis of customer values, but also first-of-a-kind items that set up new aesthetically meaningful trends and standards. Design of new items shall combine new customer values with the old ones. Designer is a creative profession, it requires for a specialist not only professional skills and qualities, but also vast internal culture, an ability to aesthetically transform tradition and novelty in the field of design activities.

4. Purpose of the Study

Building upon integration processes in science, to analyze and describe theoretical aspect of aesthetic and ergonomic properties of design in production of mass consumption items.

5. Research Methods

In order to gather the material for the research, empiric methods of studies were employed, including studying and analyzing literature on the topic of development of aesthetics and ergonomics, product design and industrial design of mass consumption items. The observation method allowed revealing systemic and structural features in social needs and the level of interaction in design activities. The analogue method allowed for reasoning about design as a developed and theoretically meaningful human activity that covers the fields of design, development and production of things with considerations for their usefulness, ergonomics and aesthetics.

6. Findings

The conducted research revealed a structural link between aesthetics and ergonomics in development of product design for practical and technologically-viable mass production items. Integration processes in science due to human development and development of self-comprehension, needs, scientific worldview, philosophical, engineering, artistic and architectural concepts allowed design to form as a distinct area of science. Design has become an integral part of the modern social and cultural environment that creates new aesthetically meaningful standards of taste for consumers.

7. Conclusion

A characteristic that was adopted at the International Design Workshop in Belgium:

Design is a creative activity, whose aim is to define formal qualities of industrial products. These qualities cover external appearance of the products, but mainly structural and functional relations that turn the product into an integral whole, both from the point of view of its consumer and from the point of view of its producer. (Borev, 1988, p. 352)

reflects the opinion of the authors of this research. This research was conducted by specialists in the fields of design, sociology, education and aesthetics. Analysis of practical and theoretical material allowed uniting these areas during the studies. Unified goods and mass consumption items are created as a result of studying societal needs. Thus, designer activity is based upon creating a new project idea, development of corresponding functional structure, its aesthetic furnishing and rational implementation of the idea, capable of forming aesthetic taste of consumers.

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