Colour Perception in Ancient World

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Abstract. How did the human thought form the surrounding color information into the persistent semantic images of a mythological, pseudoscientific and religious nature? The concepts associated with colour perception are suggested. The existence of colour environment does not depend on the human consciousness. The colour culture formation is directly related to the level of the human consciousness development and the possibility to influence the worldview and culture. The colour perception of a person goes through the stages similar to the development of colour vision in a child. Like any development, the colour consciousness has undergone stages of growth and decline, evolution and stagnation. The way of life and difficult conditions for existence made their own adjustments to the development of the human perception of the surrounding world. Wars have been both a powerful engine of progress in all spheres of life and a great destructive force demolishing the already created and preserved heritage. The surrounding world has always been interesting for humans, evoked images and fantasies in the consciousness of ancient people. Unusual and inexplicable natural phenomena spawned numerous legends and myths which was reflected in the ancient art and architecture and, accordingly, in a certain manifestation of colour in the human society. The colour perception of the ancient man, his pragmatic, utilitarian attitude to colour is considered as well as the influence of dependence on external conditions of existence and their reflection in the colour culture of antiquity. “Natural Science” conducts research in the field of the colour nature and their authorial interpretation of the Hellenic period. Several authorial concepts of the ancient world have been considered.

1. Introduction

Most people learn about the surrounding world, perceiving the colour, which at the dawn of civilization served people as media, and a symbol, and adornment. This is the social significance of colour. From ancient times until now, the colour of nature is an inexhaustible source of emotional sensations and aesthetic experiences. Colour has an unquestionable influence on the conditions of people's life, facilitating or complicating them. Therefore, people always strive for colour harmony, people always paint in a certain way their space, household items, clothes, food, lighting and even sounds and smells impart certain colour characteristics.

To speak on the matter it is necessary to adopt certain provisions:

1. The colour environment exists independently of human consciousness and is the most powerful source of emotional reactions and aesthetic experiences, constantly giving people impulses of co-creation with the Nature. The question is relevant in the framework of the topic under consideration, since the ideas of Plato and his followers have survived to the present day.
2. The social meaning of colour or what is commonly called in coloring the term "colour culture" is a complex multi-level system that reveals itself in various manifestations of spiritual and material life, tied to the place and time, to specific material carriers and their creators. Able to dynamically develop, solidify and crystallize under the influence of the canon, regress and dissolve in time and space as the people that gave birth to it. To carry the whole image, as a reflection of the World Harmony or to disintegrate in the kaleidoscopic dance of forms, materials, authorial ideas, technologies and other things, striving for complete or partial achromatization of the perceived color field. This applies to our time, when it is difficult to harmonize the visual field.

3. Considering the dynamics of colour perception, it should be noted that humanity in its development is passing through similar stages in the development of colour vision of a baby.

2. Main part

It is difficult to name the branch of human activity in which colour would not occupy a significant position. This explains the complex synthetic nature of the science of colour. The language of colour for people at the same time is an artistic-aesthetic and functional-utilitarian sign systems. The first is based on the symbolism of colour, colour culture, and the second - on the psychophysiological features of perception, reaction to colour. Historically, the relationship of a person to colour has changed, depending on the level of development of the material culture of his spiritual and artistic components. From the level of awareness of the role of colour in various areas of life and the gradual transition from the mythological consciousness to the natural scientific knowledge of the nature of color phenomena. From the prehistoric times to our time, colour information was interpreted into graphic symbols and colour systems. The relationship of mankind to the colour world can be conditionally divided into "pre-scientific" from prehistoric times to the end of the sixteenth century and "scientific" from the seventeenth to the present.

In the pre-scientific period, the relation of ancient people to colour was built on vital phenomena for them and dependence on the forces of nature. The aesthetic component of the relation to colour at that time was absent or was in an embryonic state and in human consciousness it was not allocated in the field of value relations. For the ancient man, the diversity of the surrounding colour world did not matter. Man isolated from reality a limited number of colours associated with the most important objects and phenomena of everyday life, giving them a certain, often iconic value. A savage, unlike a civilized man, almost does not distinguish between the natural and the supernatural. The world for him is the creation of supernatural, anthropomorphic beings who act out of motives like his own, and which can be touched by appeals for compassion. With such a view of the world, a savage does not see the limit of his ability to influence the course of natural processes and turn it in his favour. And if the god incarnates in himself, then the need to address the higher being disappears altogether.

This is the first way to the formation of the idea of a man of God. But there is a second one. Along with the notion of the world as the site of the various spirits, the savage has another, perhaps even more archaic, representation in which we can discover the germ of the modern concept of natural law or the view of nature as a set of events that take place in an unchanged manner without the intervention of anthropomorphic beings. The concept that we mentioned is embodied in sympathetic magic - playing an important role in most of the early religious systems. [1-3]. Echoes of such views have survived to this day in some nations of Africa, Australia and Oceania, they have three colours of white, black and red. By the way, the child, in addition to the range of achromatic colours, the first of the chromatic begins to recognize red and shades of pink. Mom - warm red, orange, yellow i.e., the colours of the "feminine". The next perceived colour is the opposite, most often blue. Therefore, dad is blue, and in the overwhelming majority of peoples the deities of the "masculine" are correlated with the cold colours. The Earth is warm - the sky is cold. Hence the cosmogonic theory of the Indo-Europeans, the three-part division of the World. Ancient Slavs had: Prav' - white, Yav' - red, Nav' - black.

Until the nineteenth century, the astronomical symbol of the Earth was considered to be a circle with a point in the center, and according to the Vedic and Greek religious and philosophical tradition,
such a symbol denoted an unmanifest deity and simultaneously an initial embryo for the subsequent incarnation, a kind of "Everything in Everything". Analyzing the religious traditions of the East and West about the act of creating the universe, a graphic symbol appears with a vertical or horizontal dark half, that is, there is already a division of top, bottom, left, right, light, darkness. There is light, but there is no colour.

With materials for creativity, the ancient man did not have much choice, synthetic dyes will appear very in the far future, they took what was at hand. Coal from deep black to shades of gray, white kaolin clays, and a huge range of red and ocherous clays. Later, they began to use natural minerals, rubbing them to a powdery state. (Figure 1).

![Figure 1. The wounded bison. Painting in the Altamir cave. The Upper Paleolithic Period.](image)

With the development of clan relations, crafts, agriculture and cattle breeding, important natural concepts such as the sun, sky, water, land and vegetation on it are actualized. There are rudiments of social relations, the concept of gender, tribe, recognition of one's own and the original colour preferences, usually associated with the colour of the totem animal. Where red is life, blood, rebirth in the Roda tribe and Nature.

On the African continent, the state had emerged that existed for almost three millennia, while changing little over time, where a unique culture was created and in relation to colour in particular. The whole culture of Egypt is twofold in its essence. It is the art of rigid centralized power - dyspotism in classical terms, with its striving for gigantomania, suppression of the minds of subjects with perfected ways, where all methods available at that time are used: hypertrophied scale, massive architectural forms, light-colour swings, intentional lay-downs. (Figure 2). And artistic forms of incomparable nobility and beauty, when the author simply admired the colour, giving it to others. [4]. Another merit of the Egyptians is the creation of a harmonious system of colour symbolism, canonizing colour schemes for many centuries ahead, right up to the Middle Ages.
In the Hellenistic period, the mythology of the ancients gradually degenerates in relation to colour and aesthetic consciousness is distinguished. People were increasingly becoming aware of beauty as an independent concept. In the ancient era, in connection with the separation of socio-economic relations, science, religion into an independent industry, prerequisites for the classification of flowers and their unification arose. The understanding of colour harmony developed. There is polychrome in painting, architecture, clothing, utensils and ornaments. There were "folk" and elite culture. The colours were divided into noble and low, cultural and barbarous, dark and light. In accordance with the ancient mythology, the colours that symbolize the colours of the elements, light and darkness stand out. (Figure 3). It was during this period that Hellenistic thought turns its attention to the "scientific" approach to the problem of colour phenomena, it is necessary to give them due, for example, the numerology of the Pythagorean school is in demand in our time. [5-10]. It is worth mentioning the study of colour in the Hellenic period.

Aristotle was the first to investigate and give his authoric interpretation of optical colour mixing. He conducted experiments with daylight, which is rarely colorless, falling on a white marble wall after passing through a yellow and blue glass. Aristotle saw the green component in addition to the original, yellow and blue, and came to the conclusion that the green will be formed by mixing yellow and blue. Any colour system, (in his opinion) should be located from white to black and is built in a straight line. The linear sequence of Aristotle's colours can be seen during the day: white light at noon is seen with a shade of yellow, and changes gradually to orange, and then to red. After sunset, the red turns purple, changing in the evening sky, which seems dark blue. One of the main phenomena of colour perception is that our brain encapsulates a variety of colour impressions in a circle. This circle can start with blue, go turquoise to green, and through greenish-yellow to yellow, to orange and then to red, and back to blue through purple and indigo. This colour circle can be explained by reference to the three eye receptors and their absorption of light. Limited knowledge of colour perception explains the desire of Aristotle to apply a simple linear construction of colors.
Figure 3. Knossos Palace on Crete. 1800-1700 BC.

The next person who tried to systematize colours was Plato. Plato's basic ideas about our colour perception are based on his idealistic conception of the world. They are based not on the rays entering the eye, but on the rays emanating from the eye, interacting with the particles of the objects under consideration. Plato introduces two basic colours: "white, which extends our visual rays, and black - its opposite." The other two primary colours are red and "shining". With these four basic colours, further mixtures are possible. Plato actually did not build a complete colour system, but only gave a personal idea of the nature of light and colour as a help in understanding his philosophical ideas.

Pythagoras and his followers endowed numbers, and their combinations, geometric figures with magical meaning. Searching for harmony in the world on the basis of any elements: musical structure, arithmetic series, natural rhythms, architectural details - the ideology of the Pythagorean school. Harmony was the goal of finding colour models. The most widely known project of Pythagoras, which determined the relationship between the musical scale and the position of the planets between earth and the star sphere.

Exploring mythological pictures, we can trace the path from a modern, civilized man, so far from nature to man, who lived in close cooperation with her ... the world was still young and the man lived in direct connection with the earth. At the time of the emergence of myths between the real and the unreal, there were very few differences. The man's imagination was surprisingly alive and not restrained by reason, so that anyone in the forest could see a nymph passing by the trees, and in the depths of a transparent reservoir to see the face of a naiad. [11-15].

3. Conclusion
The art of the Ancient World is often blamed for some familiarity and illegibility in the choice of colour, but it is forgotten that the average life expectancy was thirty to forty years, with rare
exceptions, and a person during this time needed to know the World, to convey experience, and simply enjoy his life. And then we will never understand them completely, as a villager will not understand a citizen in an eternal dispute about what colour is better. A wonderful time for the youth of mankind. In every temple God lives, even closer to the neighboring mountain. Heroes walk the streets. Any natural phenomenon is not the action of physical forces, and not otherwise the will of God. Each object has a measure, meaning and purpose, a letter sacramental meaning. From the standpoint of our "absolute" knowledge, the ideological constructions of the ancients seem naive and ridiculous, but for some reason modern pragmatists believe in astrological forecasts and remember lucky numbers.

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