EVOLUTIONARY FOUNDATIONS OF CREATIVE IMPULSE AND THE JUDGEMENT OF AESTHETICAL EXPERIENCE

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GRADUATE SCHOOL OF SOCIAL SCIENCES
İSTANBUL, 2023

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DISSERTATION SUBMITTED TO GRADUATE SCHOOL OF SOCIAL SCIENCES

IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

Ph.D.

IN

DEPARTMENT OF PLASTIC ARTS

YEDİTEPE UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

İSTANBUL, 2023

PLAGIARISM

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ABSTRACT

The dissertation study titled "Evolutionary Foundations of Creation Instinct and Aesthetic Experience Judgments" is based on the hypothesis that "creative instinct and aesthetic experience judgments are based on evolutionary foundations". The aim of the study is to explain the survival and existential causality of artistic creation insight and aesthetic experience judgments on the evolutionary axis and to reveal the evolutionary cause and effect relationships between them. What are the evolutionary foundations that motivate the instinct of love and the instinct of creation? Is the theory of evolution that clarifies human nature in every field able to help explain the mechanisms that lead to artistic creation and the mechanisms that are effective in the development of our aesthetic perception? The dissertation study, which focuses on these questions, was developed with an interdisciplinary method by using art, biology and philosophy sciences. Visual and printed books and articles were read, and experiments and studies conducted with animals other than humans were examined. As a result, it has been observed that the judgment of appreciation and the desire to be appreciated, which are the basis of artistic actions, lie in the selection, and orientation and avoidance behaviors, which are the main behaviors of the survival and existential struggles of living beings.

Keywords: Evolutionary Aesthetics, Color, Art, Selection, Sense, Perception, Aesthetics, Evolution, Appreciation, Beauty, Epigenetics, Genetics

ÖZET

"Yaratma İçtepisi ve Estetik Deneyim Yargılarının Evrimsel Temelleri" başlıklı tez çalışması "yaratma içtepisi ve estetik deneyim yargıları evrimsel temellere dayanır" hipotezi üzerine kurulmuştur. Çalışmanın amacı; sanatsal yaratma içtepisi ve estetik deneyim yargılarının sağ kalımsal, varoluşsal nedenselliklerini evrimsel eksende açıklamak ve aralarındaki evrimsel neden-sonuç ilişkilerini ortaya koymaktır. Beğenme içgüdüsü ve yaratma içtepisini motive eden evrimsel temeller nelerdir? İnsan doğasına her alanda açıklık getiren bir teori olan evrim teorisi sanatsal yaratıma götüren mekanizmaları ve estetik algımızın gelişmesinde etkili olan mekanizmaları da açıklamakta yardımcı olabilir mi? Bu soruları merkeze alan tez çalışması sanat, biyoloji ve felsefe bilimlerden faydalanarak disiplinler arası bir metodla geliştirilmiştir. Görsel ve basılı literatür taranmış, insan dışındaki hayvanlarla yapılmış olan deney ve çalışmalar incelenmiştir. Sonuçta sanatsal eylemlerin temelinde yer alan beğenme yargısının ve beğendirme isteğinin, canlıların sağ kalımsal ve varoluşsal mücadelelerinin ana davranışı olan seçme-seçilme, yönelme-kaçınma davranışlarında yattığı görülmüştür.

Anahtar Kelimeler: Evrimsel Estetik, Renk, Sanat, Seçilim, Duyu, Algı, Estetik, Evrim, Beğeni, Güzel, Epigenetik, Genetik

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EVOLUTIONARY FOUNDATIONS OF CREATIVE IMPULSE AND THE JUDGMENTS OF AESTHETIC EXPERIENCE

1. INTRODUCTION

Charles Darwin suggests in the final chapter of The Origin of Species: “In the distant future, I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation.” Indeed, in recent years, Darwinian theories have been developed in the fields of social sciences such as psychology, history, anthropology, economics, and philosophy, and they have found vast areas of application. Evolutionary psychology, which illuminates many issues of sexual, social and cultural life that have not yet been clarified, plays a role in the basis of the change of this great evolutionary perspective in the world of research and thought. Art and the cultural world are not isolated from evolution as well.

Is a theory that clarifies human nature in every field able to help explain the mechanisms that lead to artistic creation and the mechanisms that are effective in the development of our aesthetic perception?

The evolution of “Homo Sapiens” over the last billion years does not only explain the physiological changes. It also explains the source of our intellectual pleasures, from children's games to Beethoven sonatas, from cave paintings illuminated by fire to art galleries, to artistic experiences that create great excitement and fun.

Are the common sense judgements the result of ancient motives that are to sustain our existence? The fact that some things are seen as beautiful, appealing, attractive or the exact opposite; repulsive, unpleasant, terrible, irritating, and ugly is also the result of the orientation of the existential instincts of living beings. The four essential mechanisms of evolutionary existence work as a result of the judgements based on the beauty of individuals/ society.

Sexual selectivity - Instinct of feeding - Herding - Mother-child relationship

For example, predators set traps for their prey, similar to the kind of food the prey would enjoy. Flowers are of colors that appeal to bees to spread their pollen. Some animals are of colors that evoke danger to protect themselves from predators, or emit unpleasant smells. How do the abilities to create and appreciate work in these four instinctive mechanisms?

The core of each characteristics, behavioral and, instinctive traits that exist in humans are also present in animals. May the core of artistic production also be seen in animals? What should be the point of view regarding animals while trying to understand human nature?

While looking for traces of artistic creation in animals, it is seen that studies and experiments exhibit excessive anthropomorphous approaches. For example, when Thierry Lenain worked on chimpanzees, he did it them painting with paints, papers, and pencils on a surface. These studies have nothing to do with the evolutionary development of chimpanzees. Of course, there is a wide gap between human art and chimpanzee art. Our ancestors diverged from the ancestors of chimpanzees six million years ago. The whole of adaptations, which have become the art instinct of mankind, goes back only one hundred thousand years. According to Charles Darwin, the difference is not the species, but some degree. “The skills that make it possible for starlings to sing, for parrots to count, and for fish to find their way are the same skills that people use to compose symphonies, do calculus, and invent Google maps. We do not do anything different from animals; we do the same things, but only in a better way. “

Humans always tend to see themselves as different and sublime from other living beings. The most nurturing idea of this view is that human artistic creation ability is seen as a lofty feature specific to its own kind. The theory of evolution is not associated with ideas that pioneer anthropocentric understanding in perceiving the universe we are in. Does the desire to create that exists in humans; even in the primitive sense, exist in other animals? Is art an instinct?

The dominance of this anthropocentric approach is also seen in art philosophers. Anthropocentric approaches in some studies on evolutionary aesthetics cause inconsistencies and unclear points in the creation of evolutionary theories.

During the creation of this dissertation study, the approaches of art philosophers before and after the theory of evolution will also be reviewed and examined.

This dissertation work is a multidisciplinary production of the sciences of biology, art and philosophy. It has been observed that studies on evolutionary aesthetics are generally carried out by biologists. In these studies, although the evolutionary foundations of aesthetic appreciation and creating an aesthetic product have been examined, an art philosophy interpreted from an evolutionary perspective maintains undone.

The word aesthetics comes from the Greek word ’aisthanomai' which means 'perception through the senses.' Aisthesis was also used in the sense of perception and sensation. Alexander G. Baumgarten (1714-1762), the first philosopher who treated aesthetics as a branch of science, defines “aesthetics” as the science of sensory knowledge. “Sense” is defined in the Turkish Language Association Dictionary as the ability of humans and animals to see, hear, smell, touch and taste the stimuli of the outside world. The senses were not formed only as tools of knowledge, but they developed over millions of years as biological support for survival. From the very beginning, the senses are directed and concentrated on the features around them that determine the difference between what would cause life to go on more comfortably or what would prevent it. If aesthetics is perception through the senses, and if sense and perception have emerged and evolved in an evolutionary process, this cycle will lead us to investigate the biological origins of judgements of aesthetic appreciation and artistic creative impulse, which is the subject of this dissertation, and to examine the philosophy of art with an evolutionary approach.

In order to explain this cycle well, the evolution mechanisms are discussed in the first chapter. The reason why the dissertation study starts by briefly mentioning the mechanisms of evolution is to address the diversity caused by the struggle for survival and to address the processes of orientation and retreatment, selection, acceptance and ejection, liking and disliking behaviors from single-celled creatures to homo sapiens as a whole, and to practice this perspective. In addition, it is aimed to emphasize the vital importance of transferring a behavior that provides an advantage for the species to new generations. The subject of evolutionary mechanisms, which is a comprehensive field of biology, has been addressed by

limiting it to the extent that it can contribute to the explanation of creative insight and aesthetic appreciation behaviors, which are the main subjects of the dissertation study.

The artistic creation process requires the harmonic use of both physical and mental abilities. This process requires mental competence first. First, there must be a desire for expression about the world we perceive, then this expression must have a design done mentally. And physical competence is required in order for what is designed to be of shape. Art requires the ability to do and produce as a production activity; it also requires mental competence and development as an intellectual activity.

Homo Sapiens, which is the most developed living being among other species, and Homo Sapiens' competencies, which are the reflection of its highest intellectual and dexterity ability, are examined under the title of “Evolution of the Brain,” in the section where the behavior patterns of art and the development processes from the beginning of life are explained. Since the physical evolutionary process as a whole develops as the evolutionary process of the brain develops, our physical performance processes are also discussed in this section.

In addition, under the title “Evolution of the Brain,” “Is the desire and capacity to create art due to a feature specific to the human brain?”; “Can the evolutionary traces of this skill be seen in the evolutionary process of the brain?” are questions that are examined.

In the fourth chapter, the “Aesthetic-Epigenetic Relationship” is discussed. Studies on the transfer of knowledge to new generations with epigenetic transfers can also provide enlightening information about the transfer of aesthetic knowledge to new generations. Intriguing studies on the aesthetic-epigenetic relationship have been ongoing recently. The subject of epigenetics is one of the newer subjects of science, and it is a field that greatly attracts debate. Epigenetic mechanisms differ from the selection mechanisms of evolution, but it is necessary to mention the studies on epigenetics and aesthetics, mainly because of the genetic transfer of information.

As stated before, the process of artistic creation requires physical and mental competence. This competence, at its very core, is the ability to use tools. The degree

of the ability to use tools also varies from one species to another. While people can use much more advanced and complicated tools such as paints, brushes, spatulas, or musical instruments, This ability can be seen in birds that decorate their nests by placing a plastic bottle cap, or in monkeys, a species close to ours, using pencils, brushes, and paint.

In prehistoric times, the gap between animals and humans was not this wide. While trying to determine our evolutionary origins regarding our art production and aesthetic appreciation judgements, it is also very important to be able to observe and know how and at what level these abilities and skills emerge in other animals. In the evolutionary steps leading to art production in humans, physical and mental competencies in other animals are discussed under the title of “Examples of Cognitive Properties Considered to be Human Specific in Other Living Beings”. The studies and techniques on these subjects were mentioned in order to show their scientific reliability, and the results are discussed.

If the thesis put forward in this study and the foundations of which are tried to be established, that aesthetic taste and aesthetic object creation behavior play an active role in evolutionary selection mechanisms is correct, the traces of these behaviors should also be seen in animals. Under the title “The Origin of Art in Animals other than Humans”, researches on this subject with animals and their results are examined. It is important that these studies were carried out in a way that could answer the questions stated. For example, whether there is a reward and punishment system that affects the behavior of an animal or whether a conditioned reflex develops.

The most important work on the artistic abilities and will in animals was carried out by the English zoologist, ethnologist and surrealist painter, Desmond Morriss. Since Moriss conducted his research on artistic abilities in animals, he focused on whether activities such as paintings done by animals should be called art. In his experiments and observations, he used methods such as conditional learning, observer effect, and reward effect. Numerous references to Moriss' work can also be found in studies on evolutionary aesthetics.

In the section “Effects of Selection Mechanisms on Aesthetic Perception of Living Beings”, “beauty” and “ugliness” are discussed conceptually. In the context of the functionality contained in these concepts, the functionality of beauty and ugliness in the nature of living things is emphasized. It has been explained how the natural and sexual selection mechanisms of evolution affect our perceptions and aesthetic appreciation judgements as a result of our perceptions.

Our most basic sense organ in perceiving our environment is our eyes. When it comes to visual perception, the first thing that comes to mind is colors. Basic art education also begins with color theory courses. Colors are the basic unit of art and aesthetics in both theory and practice. A research on the evolutionary origins of our art, makes it necessary to examine the origin of colors, which is the most basic element of art**. Under the title of “Evolutionary Basics of Color Perception**”, how our visual perception follows the development in the struggle for survival is examined. Additionally, how and why living things react to colors, and what role color plays in the natural and sexual selection of living beings are discussed under this title.

Baumgarten calls aesthetics the science of ambiguous knowledge. This ambiguity of aesthetics is a point at which philosophers are greatly interested in, and are trying to come up with an explanation. They have tried to provide universal explanations about what is beautiful, the definition of beautiful, and what is to be called ‘beautiful’. They have searched for the answer to the questions of why we like an object or why we do not like it, and whether we can find universal answers to this subject. The source of this ambiguous information is the sensory information we perceive with our sense organs. Can we find more concrete explanations of the origin of sensory information in evolutionary mechanisms that work pragmatically? Following the footprints of the philosophers who approached aesthetics from an epistemological point of view in the history of philosophy, the section where the answer to this question is sought is “The Source of Aesthetic Knowledge/Aesthetics: The Science of Sensory Knowledge.”

In the first chapters, the dissertation study, which starts with the explanation of orientation and retreatment, liking and disliking activities in the cellular context, emerged with a narrative method in which science and philosophy support each other

until the necessity of synthetic apriori knowledge and, as Kant suggests, Nature has the purpose of being beautiful just like the work of art.

CHAPTER I

2. MECHANISMS OF EVOLUTION

Evolution is a natural phenomenon that reveals the fact that living beings have changed, while Theory of Evolution is a set of explanations for how this law of nature works and why living things have evolved. “Mechanisms of Evolution” are the foundations which the theory of evolution is based on. The evolution discovered has more than 20 different mechanisms. These mechanisms act in different environments, on different living beings, in different amounts. (Bakırcı, 2018b)

Mechanisms of Evolution can be divided into two groups:

1. The Diversity Mechanisms of Evolution are the laws of nature that cause diversity within a species[1]. As a result of these phenomena, the genetic structures of living beings change. Diversity mechanisms are usually micro-level; they are related to genes. These mechanisms causes variation. Evolution occurs only as a result of the selection of this variation.

Sexual Reproduction and Crossing-Over

Gene Flow (Migrations)

Genetic Drift

Mutations

Transposons

Viruses

Plasmids

Horizontal Gene Transfer

[1]Species: It is the smallest grouping in the classification of living things. A group of organisms that reproduce with each other and are reproductively isolated from other groups.

2. Selection Mechanisms of Evolution

Natural Selection

Artificial Selection

Sexual Selection

Kin Selection

2.1 The Diversity Mechanisms of Evolution

2.1.1. Sexual Reproduction and Chromosomal Crossing Mechanism:

First, unicellular organisms reproduce with a reproduction type called "Amitosis Splitting". In this type of division, genes do not mix with each other; they are copied directly and passed on to new generations. Therefore, genetic changes that occur in ancestral individuals are passed on directly to the offspring. In eukaryotic[2] organisms, it is observed that amitosis division develops and becomes more complex, evolving into a type of division called "Mitosis Division". In this division, the cells in the individual ancestral position transfer their genes to their offspring as they are. There is no special mechanism that contributes to diversity. Of course, mutations, transposonal jumps, plasmids, and viral infections may create diversity in amitosis division and mitosis division as well. (Bakırcı, 2018b)

In the evolutionary process, while the cells in the bodies of more advanced organisms multiply with mitosis, we see a more advanced type of division in reproductive cells, the "meiosis division" type. Since the new breeding types that emerge as the diversity of living beings increases, they had have advantages and disadvantages over each other, and the breeding style has changed and diversified in the universal process. For example, the biggest advantages of asexual reproduction are that it is a very fast division type, can produce many copies quickly, and requires very low energy. In contrast, whatever traits parents have in this type of division, the offspring will have almost identical traits. This means that if an element that can kill even a living thing enters the population, the entire population will also be destroyed.

[2] EUKARYOTIC: Cells with nuclei and complex structures and living things consisting of these cells. PROKARYOTES, on the other hand, are simpler cells without a nuclei. Bacteria and archaea are prokaryotes, while animals, plants and fungi are eukaryotes.

Therefore, although they are more complex in the evolutionary process, cellular division types that can contribute to diversity such as sexual reproduction and meiosis division may be more advantageous. (Bakırcı, 2018b)

The main advantage of sexual reproduction is that the genes of two different individuals mix to form new offspring. During the formation of reproductive cells such as sperm and eggs produced by meiosis before mating, a genetic mixing between chromosomes called Crossing Over contributes to genetic diversity. The idea of crossing over is that during the juxtaposition of pairs of chromosomes that will go to the offspring cells, the gene fragments are mutually exchanged due to chemical interactions. There is no conscious mixture here, there are purely physical and chemical interactions. This crossing occurs in female and male reproductive cells; the reproductive cells, which carry some of the characteristics of both sexes, come together during fertilization to form a new generation. Thus, the information transferred to the offspring causes the offspring to not be exactly like the mother or father. Thus, diversity increases in each generation. (Bakırcı, 2018b)

Almost all of the diversity in the world is due to the mechanism of sexual reproduction and crossing over. But at this point, it would be right to draw attention to the fact that this mechanism serves to mix up the existing diversity. It is very difficult to incorporate new mixtures into the population and is rarely observed. Mutations are the most basic evolutionary mechanism that regularly adds diversity to the population. Mutations are very small but stable in population, often with long-lasting effects. The contribution of a mutation to diversity can never be observed all at once. But mutations continue to cause small variations over a long period of time. Chromosomal crossing-over creates diversity in an instant, and this diversity can be observed even after a generation.

2.1.2.Gene Flow (Migration) Mechanism and Speciation:

Living beings may start to adapt to different environments by separating from each other under the effect of isolation[3]. Isolated species have changed in their environment, different elements of diversity have been incorporated into the gene pools, so that the ancestral group is no longer seen as two equal groups. However,

[3]Isolation: “Anything that prevents certain groups of living beings from mating with each other.”

there has not been a big enough differentiation at a level preventing them from producing with other breeds and races[4]. At the level of racialization, the barriers that cause this isolation may sometimes disappear. When these barriers are removed, individuals who have changed and have acquired their own genetic diversity begin to mix with each other again. The diversity exists here as the populations separate from each other and mix again. This would not be possible if this barrier was not there in the first place. (Bakırcı, 2018b)

If the barrier had not been removed and populations isolated through migrations had not mixed with each other, perhaps speciation would have occurred and new species would have evolved. However, due to the migrations, the speed of this speciation is broken, and the isolated genes were to begin mixing with each other again. Therefore, it can be said that migrations or gene flow sometimes have a slowing effect on evolution. Migration should not always be considred as something slowing down evolution or speeding it up in all cases. Likewise, it is wrong to think of the slowing or speeding up of evolution as "contributing" to or "preventing" evolution. Sometimes the slowing down of evolution can cause species to adapt more to their environment, so the species may have contributed to evolution. (Bakırcı, 2018b)

2.1.3. Genetic Drift: Genetic drift usually occurs as a result of the isolation of a very small population of the same species from a large population. While many different genetic traits and diversity are encountered in the former large population and may be mixed with each other, a limited number of genetic diversity remains in the small population isolated in the new situation and genetic combinations are limited. In the first place, the genes in individuals that make up the small population begin to increase as a result of the mating of the small group within itself, when they are in the minority in the large population. Thus, the limited number of features seen in the formerly large population emerges and multiplies through "drift". This type of increase in genetic diversity is called "Genetic Drift." (Bakırcı, 2018b)

[4]Race: "The name given to each of the living populations that are isolated from each other in any way despite being of the same species." (Bakırcı, 2018b)

Genetic drift is the mechanism that acts on creatures that are randomly eliminated and selected during unpredictable natural activities.

2.1.4. Mutations: The chemicals and radioactive rays around are constantly and randomly changing our genetic structure. These instantaneous changes are called “mutations.” Genetic changes occur continuously in the genes of living individuals due to environmental factors. Although the change and diversity of genes is a useful element in the evolutionary process, mutation of genes can also have dangerous consequences. Thus, a number of mechanisms have developed that correct mutations and errors in our genes. (Bakırcı, 2018b)

It is wrong to conclude that mutations are beneficial or harmful because they can vary from living being to living being, from time to time. In general, mutation can be interpreted as beneficial if it positively affects the survival and reproduction of the organism, and as harmful if it is the other way around. In 1968, Professor Doctor As a result of the studies conducted by Motoo Kimura on the benefits and harms of mutations, it was seen that the vast majority of mutations occurring in living things (70-90% according to today's analyzes) are ineffective mutations; mutations that do not provide benefits or harm. Most of the mutations remaining from neutral mutations (10-30%) are harmful and are eliminated from the population. A small fraction of the remaining mutations (1-10%) may also have direct beneficial effects. Therefore, most mutations are ineffective, meaning they do not cause sudden change. These can often benefit the species in the long term, with gradual effects. Many of the few remaining mutations that cause sudden change are harmful, while a small number are beneficial. (Bakırcı, 2018b)

Variation occurs as a result of mutations. Only environmental factors and the selection processes resulting from them will decide whether the new features formed as a result of mutation are useful, harmful or neutral.

Mutations are one of the most important mechanisms of evolution. Without mutations, there would probably be much less diversity we have today. For this reason, mutations are considered by many researchers as the ultimate source of diversity. (Bakırcı, 2018b)

2.1.5. Transposons: Transposons are DNA sequences in our genetic material that can occasionally, and randomly, jump from one region on chromosomes to another. Transposonal jumps can be in the form of transposonal regions copying themselves first, then jumping these copies; or in the form of gene fragments breaking off from their location and settling in a new place. The random displacement of gene fragments means that our genes are constantly changing, and this contributes to diversity. Homo sapiens has 3 billion base pairs and around 21,000 genes, of which 40% are transposons. (Bakırcı, 2018b)

Although transposons are not one of the dominant evolutionary mechanisms, they are elements that contribute to genetic diversity and evolution. (Bakırcı, 2018b)

2.1.6. Plasmids: These are circular gene fragments that are usually found in bacteria. Unlike the linear gene structure found in eukaryotes, plasmids can survive outside on their own, sometimes joining the cell structures of other living beings and sticking to their genes and transferring their information to them. Thus, a cell can acquire the information it does not have with genes coming from the outside, and the information it has can be disrupted with these genes. Genes acquired through plasmids can cause change in new generations.

Today, using plasmids, genetic scientists can create living things or living characteristics that have never existed in nature, in the laboratory. (Bakırcı, 2018b)

2.1.7. Viruses and Horizontal Gene Transfer: Viruses are technically inanimate beings, defined as “on the verge of transition to being animate from inanimate.” Viruses have a certain organization when they are outside the host cells, but they do not have any intra-organizational activity (metabolism) on their own. When they attach to a host cell, the genetic material in the virus is activated and it passes to that host cell. Although there is activity after this point, there is no activity of the virus itself. It is only the virus's genetic material that is active, and its membrane, which isolates it from the outside environment, has disappeared. For this reason, viruses are defined as non-living beings because they do not have organization and activity at the same time. (Bakırcı, 2018b)

Viruses contribute to biological diversity by carrying genes to other cells, such as plasmids, which are the genetic material of bacteria. When a virus infects the

first host, it transfers its genes into its genetic makeup and thus begins to use the host's genes and enzymes for its own division. In this process, some parts of the host's genes are transferred to newly produced viruses. When these newly produced, genetically modified viruses infect another host, genes “stolen” from the first host can attach to the genes of the new host. As a result, new genetic combinations occur within the body. Thus, there may also be gene transfer between organisms that cannot mate with each other, even if they are not the same species and have no parent and offspring relationship. This genetic event, carried out by plasmids and viruses, is called “Horizontal Gene Transfer.” (Bakırcı, 2018b)

Typically, genes are passed from parent to offspring, and this continues on for generations. This is called “vertical gene transfer.” Genetic transfer between species rather than from parent to offspring is called “horizontal gene transfer.” (Bakırcı, 2018b)

As a result, these mechanisms affect every organism with genetic materials. With the effect of these mechanisms, the genetic structures of organisms constantly change and allow new species to form in future generations. All of these mechanisms ensure that everyone is different from each other and from their parents, as well. The diversity mechanisms of evolution are the first step. What is important is the mechanisms of selection and, accordingly, the change of living beings over generations. The diversity mechanisms of evolution create a diversity, a space in which the selection mechanisms of evolution can work. Selection is inseparable from diversity. (Bakırcı, 2018b)

2.2. Selection Mechanisms of Evolution

2.2.1. Artificial Selection: It is “artificial selection” to choose a living being according to its certain characteristics and to prevent the survival or reproduction of its siblings or congeners, who are its own descendants, while allowing this creature to survive and reproduce. With artificial selection, the gradual change of new generations of a species can be achieved by artificial means. Humanity has produced plants and animals that have come to their work for many years, for example, dogs with countless species today, and the vegetables and fruits we eat, using the method of selective production. (Bakırcı, 2018b)

It should not be assumed that the method of artificial selection is used only by humans, this method is also used by other living things in nature. For example, Atta Colombica, a leaf-cutting ant species, belongs to the Attini tribe and establishes mushroom farms much like the more than 230 species in this tribe. Ant nests have a moist, dark and abundant carrion environment; it is possible to find countless mushroom species in these nests. However, ants have developed a mutualist relationship with some fungi in the evolutionary process, that is, a relationship in which both sides benefit. The Atta Colombica ants only let the fungi of the basidiomics branch survive, and they kill the fungi of the other species by removing them and throwing them out of the nest. They feed and protect the fungi they leave in the nest and ensure their development. This is because the chemicals produced by these fungi keep some of the animals that are predators of these ants away from the nest. Ants facilitate the survival of organisms that benefit themselves by artificial selection and support their evolution, while eliminating others. The origins of this behavior are thought to date back as far as 40 million years. (Bakırcı, 2018b)

2.2.2. Natural Selection: All natural evolutionary processes are based on the struggle for survival. This struggle may be escaping from hunters or chasing prey, or it may be adapting to a new environment, or the structural-funstional evolution of an organ, or the evolution of a behavior.

There is a fierce and brutal struggle in nature. Almost all of the species in nature are involved in this struggle, acting as the hunter, the prey, or the both at the same time. The purpose of this struggle is to survive and continue on with their reproductive lineage. Those who succeed will survive and continue on with their lineage, and those who fail will die and go extinct. The balance of nature is based on this brutal struggle. (Bakırcı, 2018b)

Every prey and predator must feed on living beings, whether a plant or an animal. Every living being has evolved to obtain these nutrients. Those who have a genetic combination that prevents them from doing so for some reason die more easily than others and are eliminated more quickly. On the contrary, if a species has a genetic structure that will make it more successful, and if the state of environmental elements supports these genes, they becomes more advantageous than others and can pass on genes that help them be more successful and more compatible with their

environment to future generations. This is the “Law of Natural Selection” described in Charles Darwin's book “On the Origin of Species” published in 1859.

There is a wide biodiversity in life. The basis of this biodiversity is provided by the variations formed through the Diversity Mechanisms of evolution. These variations accumulate in a certain direction through the Selection Mechanisms of evolution, selected according to the relationship between environment and organism. As a result of this selection, various adaptations occur within the populations of the species. Each adaptation is a small part of evolution, and they combine to cause genetic and physical changes to a species. Changes in the genetic dimension are called “microevolution” and changes in the organism dimension are called “macroevolution”. (Bakırcı, 2018b)

Natural selection is based on the principle that organisms as a whole, with their physical and genetic structure, cannot be considered independent of their environment. The genes that make up the organism and the physical appearance (external structure), which is the expression of these genes with the effect of the environment, are in a constant relationship with the environment, and this relationship is the main factor affecting the species' evolution. Living beings are in close contact with their environment, the main purpose of each species is to adapt to their environment. The force that drives living beings to change is the change in the environment. In variation, some individuals survive under the influence of environmental conditions, while others are eliminated. This is how evolution happens. (Bakırcı, 2018b)

The environment is a comprehensive and chaotic system that changes regardless of the wishes and desires of a species, containing hundreds of billions of elements and factors. When the physical, chemical and biological elements that are constantly changing in the environment come together, perhaps millions of properties change completely randomly. (Bakırcı, 2018b)

Every living organism is also affected by the changes that occur in other living beings around it. The best example of this is the predator and prey relationship. Each change in the traits of the prey directly affects the traits of the predator, and each change in the traits of the predator directly affects the traits of the

prey. In addition to the hunter-prey relationship, numerous interactions between species such as mutualist, unilateral utilitarian (commensalist), unilateral parasitic relations, struggling relations that species have to enter into in order to live in the same environment in the struggle for existence, relationships between parents and offspring within the species, and relationships between spouses lead to the formation of a complex and variable ecological network between living beings. (Bakırcı, 2018b)

Natural Selection is not a principle of life struggle consisting of hunter and prey relationships. Natural Selection is the law of nature that makes it possible for an organ that has lost its function to adapt to the environment by using it in a different structure, and the adaptation that allows plants to survive by losing a very small amount of water in deserts where living conditions are very difficult is also an example of Natural Selection. Natural Selection is a law of nature that emphasizes the "survival" goal of living beings. (Bakırcı, 2018b)

2.2.3. Sexual Selection: "*Sexual Selection" is the effort of the sexes in the sexual reproducing species (with different sexes) to fight against individuals of their own sex in order to achieve reproduction or to persuade the opposite sex to reproduce with itself. This is often done unconsciously, but within the behavioral mechanisms that evolutionary processes impart to species. Therefore, when it comes to Sexual Selection, instinctive behaviors stand out rather than cognitive behaviors. (Bakırcı, 2018b)*

According to Charles Darwin's definition in The Origin of Species (2009), *"The success of a species is determined not only by the struggle for survival, but also by the struggle of males to have females. This struggle is not to cause the death of the unsuccessful, but to cause the individual to be able to produce fewer offspring, or perhaps no offspring at all."*

As stated before, the mechanism of evolution related to the struggle for the survival of living beings is Natural Selection. The mechanism of evolution related to the reproduction of living beings is Sexual Selection.

Each living individual has different characteristics from the others. However, when the population is examined, it is to be observed that these differences are not

completely random. In particular, it can be seen that certain characteristics within the same species are collected in different sexes. Males and females of one species are often visibly different. The species that the sexes of can be separated from each other by looking at their morphology (appearance) are called “sexual dimorphic species”. The species in which the sexes cannot be visually separated from each other are called “sexually monoformic species”. (Bakırcı, 2018b)

Sexual dimorphism is one of the main elements of Sexual Selection. Since when the sexes started to be separated from each other on the basis of genes, certain characteristics have been collected on these sexes. With the formation of sexes, new genetic diversity has also emerged. This genetic diversity is not evenly distributed among the sexes. There are many differences between males within themselves and females within themselves, and the variety between the sexes is immense. Sexual Selection is the process that allows for such a big separation of sexual traits. (Bakırcı, 2018b)

During the separation of the sexes, hundreds of millions of years ago, Sexual Selection was not very effective because there were not as many sexual differences then as this type of selection could affect. In the period after the formation of the sexes, the opposite sexes chose each other randomly. But as the process continued, some preferences and traits produced more efficient offspring in terms of genetic combination, while others produced more unsuccessful offspring. This was due to genetic variation that differed with the formation of the sexes. At this point, Natural Selection triggered Sexual Selection. (Bakırcı, 2018b)

As in Darwin's words, “... the struggle of males to possess females...”; it is seen that in most species, mostly males woo to impress females. And the females are

in a selective position. This is because of evolutionary economics[5] and principles of exchange[6].

During the separation of the characteristics of the sexes; sexual organs, reproductive cells and the contributions of different genders to the offspring also begin to differ. For example, sperm, which is a male reproductive cell, is produced in excessive numbers and is relatively easier to produce; eggs, which are female reproductive cells, are usually produced in small numbers and are more difficult to produce than sperm cells. Because the offspring lives by feeding on the egg and therefore the egg has to be of a high nutritional value and be a protected structure. In the evolutionary process, female individuals have contributed more when caring for their offspring. Although the difference in the contribution of parents to their offspring, which is called the "sex contribution", disrupts the energy balance, this balance has been reestablished in a different way in the evolutionary process. While the side that produces more sexually contributing, rarer reproductive cells, namely females, remains in a selective and less energy-consuming position, the side that produces less sexually contributing and easier-to-produce reproductive cells, namely males, is the side that is selected and spends more energy to be selected. It is this energy balance that determines what part the sexes play in selection. (Bakırcı, 2018b)

There are two basic types of Sexual Selection. The first is the Intersex Struggle (Intersex Selection), which occurs due to its direct sexual contribution. As a result of this type of sexual selection, the behaviors and structures of the sexes to impress each other evolve. The other is Gender Struggle (Intrasexual Selection). In intrasexual selection, there is a fierce fight and struggle. Generally, males struggle with other male individuals to impress females. This struggle can also result in death. It is often seen that females prefer the more resilient and powerful. (Bakırcı, 2018b)

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[5]EVOLUTIONARY ECONOMICS: "The amount of time and energy an individual, species, or population spends on events and phenomena over their lifetime is evolutionarily important (https://evrimagaci.org/evrim-ekonomisi-6313). In other words, it is the energy balance that a living thing follows without prediction or knowledge. All changes take place within the framework of a simple energy efficiency principle. The element that shows how compatible an individual is with the environment he/she lives in as a total is how he/she uses energy throughout his/her life. It is very important how energy is spent in a lifetime. If an individual of a species uses his energy more inefficiently than others, his lineage is eliminated over generations. Because individuals who can use the same amount of energy more efficiently in the population may be more advantageous in the struggle for survival and reproduction. (Bakırcı, 2018b)

[6] THE PRINCIPLE OF EXCHANGE: the balance between the advantages of acquiring a new feature in the evolutionary process and the amount of energy needed for that feature to evolve. (https://evrimagaci.org/soru/neden-kanatlarimiz-yok-3411)

"Evolutionary changes occur as a result of the interdependent effect of different Evolutionary Mechanisms. Therefore, it is not possible to think of evolutionary processes separately from the independent effects of different Evolutionary Mechanisms. The evolution of a species can never be evaluated in terms of a single mechanism! " (Bakırcı, 2018)

2.2.4. Kin Selection: One of the most important social groups in nature is the family. Generally, when people think of family, they think of first-degree relatives such as mother, father, siblings and children. When we look at nature, the concept of family is vague. Just as there are families in nature, some species live alone. In some species, family ties are stronger and in others they are looser. Sometimes different levels of commitment are seen even in families within the same species.

In various situations, it is seen that the decisions and behaviors of living beings vary according to the number of relatives in the group, the closeness to them and the conditions. Similarly, different tendencies of individuals within a group may also cause kinship relationships to be affected. (Bakırcı, 2018b)

The first scientist to realize that kinship relations may have a selective meaning was also Charles Darwin. In his book The Origin of Species, he mentions that their families influence what sp. Darwin's work on this mechanism of selection remains highly superficial. In his 1964 paper "Group Selection and Kin Selection," Evolutionary biologist John Maynard Smith first mentions the fourth evolutionary mechanism, Kin[7] Selection. In his book, Smith defined Kin Selection as *"the evolution of characters who support the survival success of individuals affected by environmental pressures and their close relatives."* (Smith, 1999)

In order to protect their close relatives, individuals may exhibit behaviors that would not normally be supported by Natural Selection. When we consider how brutal, cruel, and selfishly the mechanisms of Natural Selection and Sexual Selection operate, kin selection may seem irrational. However, the existence of altruistic behaviors such as compassion, brotherhood and solidarity in nature are emotions that

[7]KIN: Biologically, it is used to mean "group of individuals from the same lineage", while in evolutionary biology it is used as a synonym for "relative". (Bakırcı, 2018b)

evolved when living beings sacrificed themselves and risked their lives for their relatives.

While the similarity rate of our genes with our closest relatives is much closer, the similarity rate of genes decreases as the kinship relationship becomes less significant. In terms of the selection of genes and their struggle for existence, as the chances of survival of advantageous individuals and their closest relatives increase, more successful genes will be able to survive and be passed on to future generations. In the evolutionary process, the preservation of close relatives means the preservation of our own genes. For this reason, instances that require the protection of relatives are supported by both Natural Selection and Sexual Selection. Basically, individuals belonging to a species protect and favor their relatives against other individuals of the species in terms of survival and reproduction. (Bakırcı, 2018b)

2. EVOLUTION OF THE BRAIN

The evolution of the brain, which manages vertebrates from the most primitive to the most advanced, has been a 600,000-year process. The managing brain prepares the living being to adapt to changing conditions. Although most sources think of the evolution of the mind and human evolution as parallels, this is not exactly true. To explain the evolution of the brain, we need to examine the evolution of the nervous system, which is closely related to the evolution of vertebrate animals, albeit in a narrow sense. (Sakınç, 2015)

Organelles that are sensitive in monocytes behave like nerve cells. Invertebrates from multicellular organisms do not have a nervous system, but simple nerve cells are usually sensitive to touching and light, and they give a reaction. For example, this reaction is easily observed in members of the bivalves class, including mussels. While they open their shells attached to rocks and wait for the plankton in the water to feed on them, they suddenly react when their shells are touched and close their shells. These reactions occur when simple nerve cells are activated, spreading the chemical signals they secrete and activating the muscles. Brain formation is not to be seen much in in invertebrate animals, but especially in cephalopods, there is a nervous system that is developed and divided into certain lobes and forms the functions of vision, touch and nutrition. (Sakınç, 2015)

From the most primitive organism Monocytes to the most advanced organism mammals and to Homo sapiens, the brain evolves in order to adapt to natural conditions and succeed in sustaining life.

There is not that much that differentiates humans from other animals. Studies show that only four characteristics distinguish humans from other animals. Our “productive computational skills” that provide our ability to produce an unlimited number of words and concepts, our “variable diversity of thoughts” that provide our ability to create new phenomena by blending different thoughts together, our “mental symbol use” that provide our ability to transfer our sensory experiences to others using mental symbols, and our “abstract thinking ability” that provide our ability to think about concepts that are beyond our senses. Although these different traits are

considered to be the traits that make us human, the evolutionary antecedents of each of these traits are also found in other species. These features, which are more complex and advanced in humans, are due to the structure of the human brain, which is more complex than other animals. In other words, the fact that the brain has been evolved into a branch different from other species in the evolutionary process has made us “human” and given us different characteristics. (Bakırcı, 2018a)

The complexity of a creature's behavior is often directly proportional to the complexity of that creature's nervous system. Because everything related to the brain, such as thought, consciousness, intelligence, perception, and behavior, depends on the work of nerve cells called “neurons.” If the neurons die, the organism loses these functions, or as the number of neurons increases and these neurons become specialized, these functions of the organism become more complex and develop. With the transition into being omnivorous (meat-based omnivorous) in the evolutionary process, human brain volume and the number of neurons per unit volume have increased. In this evolutionary process, the proportion of brain regions that control our conscious and perceptual behaviors has increased compared to the rest of the brain. As a result, its characteristics such as intelligence, thought, behavior and consciousness, which are thought to distinguish humans from other animals, have also become more complex, developed and specialized. As a result of this feature of evolution, masterpieces have been painted, symphonies have been composed, and scientific inventions have been made. (Bakırcı, 2018a)

The nervous system, which is also the controller of the hormonal system, creates the difference between humans and animals.

a) Number of Neurons: In 2009, Herculano-Houzel and her team found that there were approximately 86 billion neurons in the human brain in a study conducted with samples taken from human brains and statistical analysis. (Herculano-Houzel, 2009) This number is 33.4 billion in gorillas and 28 billion in chimpanzees. (https://tr.qwe.wiki/wiki/List_of_animals_by_number_of_neurons)

b) Brain Size: The size of the brain does not mean that a species is smarter than others. Comparing closely related species (for example, Neanderthals and Homosapiens in the genus Homo), this approach may be correct, as their body sizes

will be roughly the same. However, if we compare species from different orders, classes, etc., from larger taxonomic groups, this inference would not be correct. For example, an elephant's brain is 4 times larger than a human brain and has 257 billion neurons (https://en.qwe.wiki/wiki/List_of_animals_by_number_of_neurons). And a sperm whale's brain is 5.5 times the size of a human brain. Also, the relationship between brain size and the range of behavior is ambiguous. For example, the cognitive abilities of the capybara, the largest rodent in the world with a 70-gram brain, and the cognitive abilities of the capuchin monkey with a 50-gram brain are not even comparable. In the same way, the behavior of an elephant or a whale cannot be compared with that of a human. (Herculano-Houzel, 2009)

c) The relationship between brain size and body size (Brain-to-body volume ratio): Scientists have developed a method called the Encephalization Quotient (EQ) that can explain people's intelligence. The Encephalization Quotient is a coefficient that measures the ratio of an animal's brain size to its body size in a way that compares it to other animals of similar size. For the first time, EQ gives a value that human beings have a higher quotient than other living beings. Humans have 6.56 EQ on this scale, followed by various dolphin species that have 5.25 EQ, macaque having 3.15 EQ, baboons having 2.81 EQ, and chimpanzees having 2.63 EQ. (Bakırcı, 2018a S: 243-293; Jerison, 1973)

Research by Herculano-Houzel and her team has refuted the claim that all mammals have roughly the same neuron density. According to the research, as the primate brains get larger, the number of neurons increases at a similar rate. However, this situation is different in rodents. As rodents' brains grow, their neuron numbers do not increase at the same rate. Rodent brains have fewer neurons per gram. In contrast, the brains of insect-eating animals are like a mixture of primates and rodents. Some parts of their brains show an increase in neurons at a rate not parallel to growth, such as that of rodents, while others show equal growth. (Herculano-Houzel, 2009)

The conclusion of Herculano-Houzel's study can be evaluated as follows: As the body of a living creature grows, the growth of its brain is normal, as is the growth of all its organs, such as its arms and legs. This growth is to be proportionally the same as the whole body. In other words, if the body has doubled in the evolutionary

process in a given time, the growth of the brain is expected to double at the same time. However, this growth is not due to the increase in the number of neurons, but to the effect of cell size, the growth rate of tissue structures and the increase in intratissue fluids. The study shows that for primates, this increase was approximately the same, while for rodents it was 1/3.5. In this case, primates stand out as the smartest tribe among mammals.

Recent studies on the human brain have not led to a conclusion that distinguishes the human brain from other living beings'. Then how did the evolutionary process of modern Homo sapiens, which carries artistic activities that emerged with the combination of abstract thought and craft skills, develop to the present day?

Hominins experienced a significant increase in brain size and general intelligence 2 million years ago when they were ***Homo habilis***. While they were ***Homo erectus***, they gained a sense of self-consciousness, starting around 1.8 million years ago. As **archaic *Homo sapiens***, they became aware of the thoughts of others, beginning about 200,000 years ago. While they were **early *Homo sapiens***, starting about 100,000 years ago, they developed an introspective skill that allowed them to think deeply about what was going on in their own minds. As **modern *Homo sapiens***, first happening 40,000 years ago, they developed the ability to think about themselves in the past and future, also called “autobiographical memory.” (Torrey, 2018)

Homo habilis is considered to be the first hominin to separate from its primate ancestors. Homo habilis, who had a large brain, had the ability to make rough stone tools. Although primitive stone tools dating to 3.3 million years ago were found, the tools made by Homo habilis, mostly of rock fragments that were broken and sharpened, were much more advanced. (Torrey, 2018) The development of the ability to make and use tools is also associated with an important physiological evolution. Approximately 2 million years ago, the thumb became more capable, improving its grip and giving Homo habilis the advantage of making and using tools. (Abbas, 2012)

Homo habilis may be seen as the starting point of the human race. Having a big brain made them smarter, so they could make tools and use the tools they made to make new ones. The frontal-parietal brain network associated with intelligence began to evolve, and continued to evolve over the next two million years, making those after *Homo habilis* increasingly intelligent. (Torrey, 2018)

Hominins' second major cognitive leap was seen in ***Homo erectus***, which appeared 1.8 million years ago and lived up to 300,000 years ago. *Homo erectus* was the first hominin to be called human because of its anatomy and behavior. (Torrey, 2018)

Homo erectus, which had a larger brain, had shown new behavioral improvements. They developed tools that were far more advanced than the tools *Homo habilis* made, called two-sided stone axes or hand axes. They also made sharpened spears up to 182 cm in length to hunt. The first hominin to control fire was also *Homo erectus*. (Torrey, 2018)

Life and hunting in cooperation play an important role in the development of hominin relations. With their control over fire, the habit of eating cooked or smoked meat was developed. Gathering around the fire to share the cooked food played a role in the development of social interaction. (Torrey, 2018)

Homo erectus had a larger brain than its predecessors, exhibited more complex behaviors, and probably also had self-awareness. Homo erectus, which had its own awareness, had developed simple cooperative behaviors by having a rough awareness about others due to this self-awareness. But this self-awareness does not mean they could understand what others thought. (Torrey, 2018)

At least 700,000 years ago*, Homo erectus began to evolve into a species of hominin,* often called ***Archaic Homo sapiens***. These hominins have been given various names according to their region. For example, those who were in Europe are called *Homo heidelbergensis* and *Homo* neandertalensis (Neanderthal). (Torrey, 2018)

Among the *archaic species of Homo sapiens*, Neanderthals are the most well-known. Neanderthals had a large brain of 1,480 cm3 (the average human brain

today is 1,350 cm3). Neanderthals had an average height of 152 cm and a weight of 84 kg. They had strong upper body muscles and short, chunky bodies. (Torrey, 2018)

Neanderthals were excellent hunters. They made tools and weapons out of stone and bones, which were much more complex and advanced than what *Homo erectus* did. The spears that the Neanderthals made were so perfect that they are said to have been balanced as precisely as the Olympic javelins. These spears were used for hunting. They hunted in organized groups. (Torrey, 2018)

As early as 200,000 years ago, Neanderthals used ocher for body ornaments, insect repellents, and darkening purposes. Although Neanderthals had a much more advanced culture than their predecessors, it can be said that they had a fairly static period, regarding their brain size. This shows that there is no linear relationship between brain size and cultural development. (Torrey, 2018)

The most important difference of Neanderthals from their predecessors was their interest and care for other members of their group. The most important evidence for this is the nine Neanderthal remains that are estimated to have died out in Iraq between 60,000 and 80,000 years ago. In an elderly man, a large number of fractures and injuries to the right arm and left leg, which appear to had occurred years before his death, and wounds in the head which may cause blindness have been identified. It is believed that a hominin with such serious injuries would not be able to survive on his own and would need the care and support of other hominins. The fact that other hominins in the group share their meals with individuals in need of care, helping them go from one camp to another camp is evidence of mercy and compassion. (Torrey, 2018)

Showing interest and care to another person is an indication that an emotional perspective can be shared and that empathy is established. Empathy requires the ability to think from another person's point of view and understand what they are thinking of and feeling. Psychologists refer to this situation as having a theory of mind.

“The theory of mind” was first used as a concept in 1978 by primatologists and psychologists Premack and Woodruff. They suggested that chimpanzees could make judgements about the mental states of the members of their own species

(Premack and Woodruff, 1978). The theory of mind is expressed as the ability to notice the mental states and emotions of others (Brüne and Brüne-Cohrs, 2006). In other words, “it is the understanding that the behavior of others is motivated by inner conditions such as thoughts, feelings, and beliefs.” The theory of mind involves putting oneself in the other person's perspective, placing them into the other person's mind. The mind of others is not only to be understood by listening to what they say, but also by observing their facial expressions, gaze, posture, and movement. (Torrey, 2018)

Neanderthals, a species of archaic Homo sapiens, had the same brain capacity as modern humans. Probably all of the archaic Homo sapiens had gained self-awareness as they evolved from Homo erectus, and when they looked at the still water, they could recognize themselves. Neanderthals also developed the ability to think what others thought, meaning they had developed the theory of thought.

But none of these hominins could think about themselves while making decisions about themselves. They were also did not have autobiographical memory, knowing whether what the past or the future was.

Archaeological evidence from **early *Homo sapiens***, who lived about 100,000 years ago in caves and rock shelters in the Middle East and at the southern tip of Africa, bears the earliest traces of behavior associated with modern humans. These include highly sophisticated stone tools and weapons, which are produced by chipping the tip with pressure to make it thinner and sharper after the sharp edges are heated by fire. Also of interest are seashells covered with red ocher, pierced for the purpose of making necklaces or bracelets, and dates 77,000 years ago. In these caves, a 100,000-year-old ocher workshop has also been discovered. Although it is not possible to say exactly what the ocher is used for, as mentioned before, it is used to darken the skin, for the purpose of repelling insects and to decorate various tools and perforated shells. In South Africa, necklaces and bracelets made of shell beads were found, and they have been shown to exhibit different wear patterns, suggesting that the beads were arranged and worn at different times. This may be the first evidence of fashion for the evolving hominin. (Torrey, 2018)

Also, evidence was found that around the same time, hominins living in caves in South Africa wore clothes that fit them. It is estimated that *Homo erectus* and Archaic *Homo* sapiens, which lived specifically in the cold climates of Europe and Asia, wore animal skin for thousands of years in order to keep warm. About 72,000 years ago, modern Homo sapiens are said to have worn clothes that fit them even in warmer climates. (Torrey, 2018)

Wearing jewelry made of shells, beautifying themselves, and wearing clothes that fit on is an indication that **early *Homo sapiens*** were aware that other individuals were interested in them and that they also cared about their own look with this awareness. The beautifying *process* is based on what *another Homo sapiens* thinks about themselves. It's **the introspective self.**

A first-degree theory of mind describes simple human interactions that involve one person imagining what another person is thinking, but does not fully encompass social interactions. Most social communication encompasses mind-to-mind interaction that can only be fully understood if one considers what people think about other people's thoughts, and even what people think about what others themselves think. This forms the basis of the most complex social interactions. (Premack and Woodruff, 1978)

The development of a second-degree theory of mind requires a person to see themselves as an object. This includes thoughts about how they see other people, or how other people they see themselves. This is the introspective self. (Torrey, 2018)

200,000 years ago, the tongue and larynx structure developed, allowing sounds to be uttered (Abbas, 2012). The emergence of language was also seen as parallel to the development of the introspective self in hominins. There are opinions that the introspective self was effective in the development of language, as well as opinions stating that other factors may have caused it.

The British neuroscientist R. Passingham states that the similarities between introspection and language consist of hearing our own thoughts and the continuous interpretation of our inner world, and he especially draws attention to the ability to reflect one's own thoughts into language. H. Wimmer and J. Perner, on the other hand, attributes second-degree theory of mind to the establishment of language

standards in their publications. According to psychologist Mark Leary of Wake Forest University, language requires not only symbolic thinking, but also awareness of one's own communication skills and acknowledging others as recipients.

Leaving Africa about 60,000 years ago, *Homo sapiens* had attained intelligent, self-aware, empathic, and introspective skills. Starting about 40,000 years ago, new behaviors associated with modern Homo sapiens emerged.

Although bones, horns, and mammoth teeth had been used for hundreds of thousands of years, for the first time in history, animal bones, reindeer horns, and mammoth teeth was widely being used as raw materials for making tools and weapons. More advanced tools such as spearheads, chisels, wedges, spatulas, cranes, drills, needles, pierced horns used as spear-straighteners, and later spears and spear-propellers were found. Another tool that began to be used in this period was lamps. In the caves of France and Spain, where paintings and drawings from the Paleolithic period were found, many lamps were found. (Torrey, 2018)

Modern *Homo sapiens* began to show more and more diverse and advanced ornaments and decorative forms about 40,000 years ago. While ornaments made of seashells were found in South Africa that belonged to an early age; animal bones, horns, ivory, snail shells, claws, ostrich egg shells and colored stones were also used in newer ornaments. Rings, necklaces and bracelets, needles, necklaces and swinging ornaments were made from these materials. (Torrey, 2018)

The addition of various items to the graves of the dead is an intriguing new behavior exhibited by modern *Homo sapiens*. During their six million years of existence, hominins either left the dead to rot or for them to be eaten by scavengers. (Torrey, 2018)

The **emergence of art** about 40,000 years ago is the most remarkable behavior exhibited by modern Homo sapiens. The variety of visual art made during this period is impressive. Although the best known are cave paintings; engravings, clay models, sculptures, various small figures, and ornamental objects were also made. More than 300 caves have been found, mostly in Spain and France, containing artwork from this period. There are 1963 paintings and engravings of animals and geometric shapes in Lascaux Cave. Handprints in Leang Timpuseng Cave in

Indonesia and paintings of geometric figures in El Castille Cave in Spain date back about 40,000 years. Natural contours of the walls are included in the drawings in Chauvet Cave in southern France, dating back about 36,000 years ago. In the Altamira Cave in northern Spain, there are 21 bison engravings dated to about 14,000 years ago, that has outlines shaded in black and painted in red on the glistening, slippery-looking limestone of the ceiling. (Torrey, 2018)

In cave art, human figures are more rare than animal and geometric figures. Especially in the earlier caves found with drawings, traces of human hands are seen quite often. These traces were created by covering the hand with pigment and pressing it against the wall, or by spraying red pigmented soil paint around the wall so that the negative of the handprint could be painted.

In addition to animals and human handprints, geometric shapes had also been used in cave art. These geometric shapes consist of small dots and lines, circles and spirals, claviform (rod-shaped) and roof-shaped lines. Although these geometric shapes are called “marks” and “symbols”, it is not known exactly what they symbolize.

The colors used incave paintings are predominantly black, obtained from manganese dioxide or coal; and red, obtained from iron oxide. The colored minerals were pulverized and were often mixed with water containing the dissolved minerals of the cave, making it easy to apply. They carved small, pointed chisels out of flint stones to be used in the carvings and engravings on the walls. Sometimes they used charcoal pencils or paintbrushes made of animal hair. Another technique they used to apply the paint to a wall was to spray the paint on the wall with the help of an bone or reed that was empty inside. While spraying the paint, they used their hands or molds made of tree bark to get the shape they wanted. (Curtis, 2017)

More advanced tools and weapons; more diversified personal ornaments; musical instruments; cave paintings; various sculptures and fancies; all kinds of decorated objects; all of these were signs that human creativity had erupted in a way never before seen in the six-million-year history of the hominin. Many of these developments seem to occur geographically in different parts of the world at about

the same time. Some researchers have called this period the “human revolution.” (White, 1992)

Research with children suggests that for a person to have an understanding of art, it may be necessary for them to develop some basic cognitive skills, including the ability to compare a drawing or a picture with what the person has seen in the past. Studies have shown that children under the age of two do not understand how paintings work. For example, they try to reach a ball in the picture with their hands, or some three-year-olds think that the picture of ice cream will be cold, and the picture of flowers will smell nice. By the time children are four years old, they begin to develop the form of memory called autobiographical memory. Before the age of four, a child's perception of time is relatively short. As children grow up, they are able to bring their past events together in a single, uncopied self. This suggests that art, which emerged about 40,000 years ago, may have been due to cognitive developments that took place at that time. (Torrey, 2018)

While short-term memory retains and uses the information needed to perform cognitive actions, such as reasoning, understanding, learning, and performing a series of actions; long-term memory consists of memory traces that can be stored in human mind for decades. Semantic memory, a type of long-term memory, stores general information. Another long-term memory, **autobiographical (episotic) memory**, as opposed to semantic memory, is the recollection of past events, both sensory and emotional. For example, remembering the name and location of the school we have studied in the past is related to semantic memory, while re-experiencing the emotions we dissected on the first day of school is related to autobiographical memory. (Torrey, 2018)

Although autobiographical memory is often focused on the past, it is also involved in the future. Studies on the development of autobiographical memory in children have shown that the understanding of past and future develop simultaneously and are cognitively integrated. This integration creates the self of time, allowing one to use the past to understand the future. (Torrey, 2018)

Studies have been conducted on whether there is autobiographical memory in other animals like there is for humans. It is believed that animals automatically do

their future-preparatory behaviors, such as storing food or migrating, using their instincts. Some research shows that chimpanzees have the ability to analyze the past to make plans for the future. For example, a chimpanzee named Santino that lives in a zoo in Sweden, collects stones in advance and hides them somewhere in order to throw them to future visitors when the zoo opens in the morning. It is also suggested that the Florida scrub-jay has autobiographical memory. This type of crow predicts when other birds might the food it stored. Whether these behaviors in animals represent autobiographical memory remains to be answered. (Roberts, 2007; Clayton, Bussey, Dickenson, 2003; Suddendorf, Corballis, 2003; Balier, 2013)

Modern Homo sapiens' acquisition of autobiographical memory provided a significant evolutionary advantage over Neanderthals and other species of Archaic Homo sapiens that did not seem to possess this cognitive ability.

As modern Homo sapiens developed autobiographical memory, they started to become aware of their own demise. They became fully aware of death, both because they could think about themselves as an introspector and that they could imagine themselves in the future. Thus, modern Homo sapiens became the first hominin to fully grasp the meaning of death. (Torrey, 2018)

The evolution of autobiographical memory allowed modern Homo sapiens to make more ingenious use of the past to plan for the future. Techniques and technologies for making tools and weapons have also evolved, as humans started to use past experiences to plan their future lives.

The development of autobiographical memory also influenced art at that time. Of course, first of all, it is necessary to point out that our knowledge of Paleolithic art is very limited. The main subject of Paleolithic art was animals. Art in this period, after the development of autobiographical memory, can be interpreted in such a way that artists painted what they had seen in the past or what they wished to see in the future. The handprints in the cave may be called the Paleolithic equivalent of the universal graffiti that says “I was here.” The Niaux Cave in southwestern France is home to paintings from around 13,000 years ago, as well as graffiti left by visitors over the past centuries. So, how can we tell whether there is a difference between the

purpose of Ruben de la Vialle, who wrote his name on the cave wall in 1660, and the purpose of the person who painted their hand thousands of years ago? (Curtis, 2017)

Recognizing death, modern Homo sapiens, whose autobiographical memory has evolved to witness human bodies decaying in nature, realized that something had disappeared in the transition from being alive to being dead, and tried to give meaning to this situation. The vitality and mobility of the body began to be interpreted with the concept of soul. It is quite possible that some art also represented emerging religious ideas or belief in souls.

Modern Homo sapiens developed autobiographical memory about 40,000 years ago, using past experiences to plan for the future and imagining itself in the past and future. Each stage of this cognitive evolution was accompanied by anatomical changes in the brain. Thus, Homo sapiens, who became cognitively equipped, became ready to domesticate plants and animals, to establish states, to create civilizations.

3. AESTHETICS AND EPIGENETICS RELATIONSHIP

Although controversial, recent studies on epigenetics[8] also contain information about the aesthetic and epigenetics relationship. The 'epigenesis theory of neural networks through transient stabilization of synapses', created by neurobiologist Jenan Pierre Changeux (b.1936), Professor **at Collège** de France in the 1970s and 1980s, as a result of his work on epigenesis and epigenetics, aims to make sense of the interactions that occur between the brain and its physical, social and cultural environments during development. According to Changeux, social and cultural evolution was made possible as a result of the extraordinary prolongation of the postpartum brain maturation period. The recent work of Stanislas Dehaene, author and cognitive neuroscientist and professor at the Collège de France , inspired by the achievements of Changeux (d.1965), has also shown that we acquire a high level of cultural abilities such as literacy through epigenetic processes (processes that take place throughout individual development).

Changeux and Dehaene's epigenetic theories on the postnatal development of the human brain were successfully applied to aesthetics. Based on the idea that literacy is epigenetically acquired knowledge, Fabrizio Desideri (d.1953), professor of aesthetics at the Universita Degli Studi Frenze, argues that human aesthetic behavior is epigenetically fixed and actively shapes the idea of aesthetics in our minds. Preferences in different areas, such as repeated selection rules, habits, certain tastes, smells, metaphorical styles are fixed in the epigenome of the brain throughout the life of an individual and allows this individual to distinguish between beautiful and ugly and derive an inference. This inference is that whether we like or dislike that said thing.

In this case, can these epigenetically stabilized aesthetic schemes and selection rules be passed on to new generations?

[8]Epigenetics: While each cell has the same DNA, it is the mechanism by which cells differ in both shape and function. They are inherited changes in gene expression without any change in DNA sequencing. The mechanism that determines when, where, and how long genes work is called "epigenetics," which means "transgenic genetics." (Yavuz, 2014)

Each mammal has hundreds of different cell types derived originating from a single fertilized egg. The differentiation of each cell type is achieved not by the changes in the DNA sequence of the organism, but by the coordination of subsets of genes. To ensure proper temporal and spatial regulation of these genes, the cell uses a number of epigenetic mechanisms, including DNA methylation[9] and histone modifications[10]. DNA methylation is a semi-permanent effect, while hislon modifications are more temporary additions. While the genome is the DNA in the nucleus of a cell, the complex profile of DNA methylation and histone modifications is known as the epigenome. The interaction between DNA methylation and histone modifications lies behind the so-called "epigenetic memory" of each somatic cell[11]. (Mandrioli, 2015)

A researcher at Emory University Faculty of Medicine, Dr Brian D. Gias is a professor of psychiatry at Harvard Medical School and the elected president of the Society for Biological Psychiatry. A 2013 study by Kerry J. Ressler on mice contains important information about epigenetic information transfer. For the study in question, the researchers trained the mice to get scared of a cherry-like smell by electrocuting their feet. Afterwards, the responses of the offspring of these mice to a the same smell were measured. The offspring did not know that their parents had been exposed to this odor, and had never experienced it before the experiment took place. As a result of the experiment, it was observed that the offspring of the trained mice did not react to other odors, but detected and reacted to even a very small amount of the odor used in the experiment. In addition, compared to the offspring of untrained mice, the ones of trained mice were 200% more responsive to this smell.

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[9] DNA Methylation: Methyl groups are taken with nutrition and transferred to DNA. There may be imbalances in DNA methylation when low or excess methyl is taken. Some genes are better off ineffective, while others must always be active. The less methylation occurs, the more active the gene becomes. The gene sequences that should always be active are those that suppress tumors and repair DNA. (Yavuz, 2014) DNA methylation is the most studied epigenetic marker in the mammalian genome. It consists of the transfer of a chemical group (methyl group) to a cytosine, which is one of the four DNA bases in the DNA chain. DNA methylation patterns must ensure correct inheritance during mitosis division of the cell. Failure to maintain proper methylation processes leads to abnormal cell functioning that can occur in human neurodevelopment, such as neurodegenerative, neurological and autoimmune diseases and cancer.

[10] Histone Modification: Changes caused by covalent binding of groups such as acetyl, methyl, phosphate, ubiquitin or sumo to amino acids in the tails of histone proteins play a role in the regulation of gene expression by changing the frequency of the nucleosome structure. While the binding of acetyl or phosphate groups changes gene expression, the binding of methyl can cause both suppressive and activating effects on gene expression.

[11]Somatic Cell: Germ cells related to reproduction in a multicellular organism are gametes, gametocytes and cells other than differentiated stem cells. All internal organs are cells that make up bone, blood, skin and connective tissue.

The scientists then examined a gene called M71 that encodes the olfactory receptors in our nose and responds to this cherry smell. This gene, which was transferred by the sperm of mice, had not undergone any changes in terms of DNA coding. However, some epigenetic signs were found in the gene. Because of these signs, this gene expressed itself more in the offspring. This caused physical changes in the brains of the offspring and later generations: the region of the brain responsible for smell, called the glomerulus, was found to be larger in these offspring. Similar changes were seen even if the offspring were artificially produced.

In Ressler's words : “ This type of knowledge transfer can be crucial in terms of ‘letting‘ parents‘ offspring know the importance of certain environmental elements. It might help them prepare for what they will face in the future. “

Stating that epigenetic mechanisms play an important role in information transfer, Prof**.** Mauru Mandrioli argues that epigenetic effects transcend the limitations of evolutionary psychology, which is argued to play a role in the transmission of judgements of aesthetic experiences, and that evolutionary psychology illuminates questions that cannot be answered. He suggests that epigenetic mechanisms act in a much shorter time compared to natural selection, where the transfer of information to the next generation takes a very long time.

On the other hand, some scientists abstain from studies on epigenetics. Especially the interpretation of results in experimental methods is up for debate. Since it is easier to detect negative results in experiments than positive results, it can be thought that the results are due to statistical bias. There are also suspicious people about the methods. It is thought that experiments on animals other than humans cannot be generalized to larger animals such as humans. In addition, studies conducted so far have not shown that it affects two to three generations later. That's why there are scientists who argue that, unlike Mandrioli, epigenetic effects are not as long-lasting and enduring as evolutionary mechanisms.

As a result, epigenetics is a very new field of study, and studies have only been conducted in the last two decades, and an intensive study is still ongoing. As our knowledge of epigenetics improves, more can be said about the relationship between aesthetics and epigenetics.

CHAPTER II

4. EXAMPLES IN OTHER LIVING BEINGS OF COGNITIVE PROPERTIES CONSIDERED TO BE SEEN IN HUMANS ONLY

Humans are a species of animal that claim to be different from other living beings due to their developed intelligence. Opinions that advocate the superiority of humans over other animals highlight the differences in intelligence. In addition, since artistic and other creative skills are also related to cognitive functions, these features should also be taken into account when looking for similar features in other living things. Various experiments and observations on animals allow us to see that the foundations of many of the cognitive functions that make humans human are found in other living things as well. This shows how much we can learn about ourselves by looking at other species through evolutionary biology and comparative sciences.

5.1. The ability to make tools and produce: Many other animals manage to use the objects around them as tools. Their brains are developed enough to understand that some objects are "built to make their job easier." Technological tools and devices made by humans are basically in a structure that will make our lives easier. For example, ravens can use stones as tools to break the eggs they hunt. The main point of attention in the use of tools by ravens is that they fix the egg using larger stones and break the egg with a smaller stone. (Bakırcı, 2018a S: 243-293)

Orangutans are also known to use tools for a variety of purposes. Anne Russon, an anthropologist at York University in Toronto, presented an interesting report on her two-year study with her team at a meeting of the American Association of Physical Anthropologists on April 14, 2011. According to this report, orangutans living in Borneo have been found to catch fish that hit the shores or catfish in shallow waters. According to studies and observations, orangutans mix the water with a stick and scare off the catfish. When the fish begin to flee in fear, the orangutan that skillfully uses the stick in his hand, guides the fish towards the land, and the ready-made orangutans catch the fish approaching the land with their hands. (Bakırcı, 2018a S: 243-293)

It has been observed in various studies that chimpanzees regularly make and use tools in every environment. In the natural environment, chimpanzees use tools made of various substances to enable them overcoming various tasks. Sticks taken from surrounding plants and used to reach insect colonies, stone hammers used to crack walnuts, sponges made of leaves used to absorb liquids, and tree branches used to keep predators away and fight competitors are the most common tools used by chimpanzees. Just as they use ready-made materials, they also make tools that work for them. For example, using ivy or tree bark, they shape a rod that they will use to hunt termites. (McGrew, 2016)

Chimpanzees in captivity continue to use the tools they used in their habitat within the bounds of possibility. For example, when presented with an artificial termite mound, chimpanzees at Edinburgh Zoo made sticks they could use as tools from the branches they used as beds. The chimpanzees that use tools most extensively are the ones that live in people's homes. Through imitation, they have learned to use a large number of tools, from keys to a fishing rod. (McGrew, 2016)

5.2 Counting and math skills: Experiments revealed that chimpanzees are more capable than humans in counting skills that are thought to be unique to humans. Ayumu, a chimpanzee at the Primates Research Institute in Japan, was much more successful than humans in short-term memory and counting tests. In the study, chimpanzees are shown numbers 1 to 9 randomly distributed on a screen. The chimpanzees can look at as many screens as many times as it wants, to memorize the location of the numbers. When 1 is pressed to sort the numbers, all other numbers are deleted from the screen. When a chimpanzee presses 1, it is expected to mark the numbers deleted on the screen respectively. Chimpanzees are extremely good at remembering the order and location of numbers. A university graduate and puzzle enthusiast put into the same experiment, Dr Christopher Flynn Martin made 30 attempts sorting the numbers and only one of them was without failure. Moreover, it took Dr Martin 15-20 seconds to memorize the numbers and pick the right order, while Ayumu did it in 2-3 seconds each time. (Bakırcı, 2018a S: 243-293)

Kristy van Marle, an associate professor of children's early cognitive development at the University of Missouri, has worked on numerical development and understanding objects. As a result of studies on how the foundations of early

number skills of infants and even newborns were laid, it was seen that the origins of these abilities and skills consisted of a genetic transference that is evolutionarily old and that we share with most other species. In other words, humans evolved to know mathematics along with other animals. Nowadays, it is known that knowledge of mathematics is found throughout animal species. (https://tedmem.org/mem-notlari/yansima/hepimizin-matematiksel-becerilerle-dogdugunu-biliyor-muydunuz)

Irene Pepperberg, a lecturer at Harvard University, studies animal consciousness using parrots. In particular, she has been studying the abilities of Alex the gray parrot for years. Studies show that Alex can count numbers, understand what 3 means, and understand that 4 is greater than 3. (https://www.hurriyet.com.tr/kelebek/hayvanlarda-sayi-yetenegi-de-var-38574768)

Many experiments have also been conducted on primates and infants on the concepts of “less” and “more”. Susan Carey, a psychologist at Harvard University, saw 10 and 12-month-old babies crawl from two jars with one and two cookies in each of them to a jar with two cookies in it. Similarly, macaque monkeys prefer the basket with 3 apples instead of the basket with 2 apples. Cognitive scientist Claudia Uller, who has studied red salamanders, found that these amphibians pointed their noses at the tube with more fruit flies in it. Ullers's study is the first study to find another animal that is not a primate distinguishing between “less” and “more.” This discovery shows that what is necessary for higher mathematical abilities were based on primitive abilities that had evolved while us humans were not yet on earth. The similarities between the counting abilities of living species are remarkable. While deciding on “more” or “less,” when the number exceeds 4, it is seen that the preferences are random. Human babies always choose 3 when asked to choose between 2 and 3. However, when asked to choose between 3 and 4 or 4 and 6, the choices are random. The same result is obtained in experiments on resus macaques and salamanders.

(https://www.hurriyet.com.tr/kelebek/hayvanlarda-sayi-yetenegi-de-var-38574768)
Studies show that the mathematical abilities of all living beings have evolutionary common foundations.

Many studies reveal that animals and humans grasp numbers in similar ways. The ability to evaluate numbers in living beings provides vital advantages in nature. For example, it is a great advantage to know which tree has more fruit or to know how many enemies there are in the region. Randy Gallistel, behavioral neuroscientist at Rutgers University in New Jersey, suggests, “If you know that there are six lions in the area and you can only see four of them, then wondering where the other two is of great importance for survival.” (https://www.hurriyet.com.tr/kelebek/hayvanlarda-sayi-yetenegi-de-var-38574768)

5.3 Emotions: Charles Darwin's first original edition, “Expression of the Emotions in Man and Animals,” published in 1872, contains observations of human and animal emotions and behavior. Darwin's Expression (Darwin referred to his book this way) was criticized by many scientists, who believed that anthropomorphism (identifying people's feelings and thoughts with those of animals) was a crime. Until recently, some animal behaviorists did not find it scientific to explain animal behavior based on emotions. Among those who study animal behavior, there is disagreement as to whether expressions are the result of emotions or depend on internal psychological experiences. Some think that it would be more accurate to accept expression as a communication signal, and many studies are done with this approach just by explaining what animals do. Psychologist Paul Ekman (d.1934), known for his studies of human emotions and their effects on facial expressions, argues that we do not need to choose whether an expression is emotional or a communication signal because they are both. Different scientists agree that expressions in animals are a sign of emotions. Suzanne Chevalier-Skolnikoff, an American primatologist, suggest that by examining behavioral processes and understanding how behavior works, primatologists are convinced that the interpretation of facial expressions in nonhuman beings in the emotional structure is correct.

Jane Goodall, a scientist who has worked with chimpanzees in Tanzania for many years, observed that chimpanzees carry emotions such as love, compassion, anger, fear, and anxiety, and that they mourn the death of their loved ones. (Hallet, J. D., 1990) Different sources comment differently on the reactions of chimpanzees to

death. Fuller Torey, referring to Jane Goodall's work published in 1986, suggests that even among chimpanzees, the closest primate to humans, there is no indication that they understand death. Jane Goodall recorded the deaths of 66 chimpanzees in Tanzania and saw the bodies of 24 of them. In most cases, the dead animal has been left to rot, ignored by other chimpanzees. Once, when an adult male fell from a tree and died as his neck was broken, other members of the group showed intense excitement and anxiety around the deceased animal and threw stones at it. In the deaths of three other chimpanzees, the adults killed and ate the baby chimpanzees. (Torrey, 2018)

Again, Cynthia Moos, who works in the field, reported that elephants also mourn after death as a result of her studies with elephants in Kenya. (Torrey, 2018)

People who keep pets also observe that their animals have emotions in a familiar way to humans. It has been observed that when one of the two rabbits, who were fond of each other living in the same house, got sick and died, the other lost its joy and old behaviors. It started searching for its friend everywhere in the house, lost hope of finding his friend after a week, was depressed and stopped eating, and just sat where its friend sat and did not go anywhere else. (King, 2019)

5.4 Self-awareness: Bud Craig, a neuroanatomist at Arizona State University, defines self-awareness as “knowing I exist” and “feeling of me.” Definitions such as “feeling one's own presence”, “ability to attract one's own attention”, “myself as an object”, “the self that feels” are also made. (Torrey, 2018)

The best indicator of intellectual capacity is the ability of the individual to recognize themselves in the mirror. The existence of self-knowledge, self-awareness or self-concept in the individual is quite a capacity. Chimpanzees and orangutans have been proven to recognize themselves in mirrors in various experiments and observations.

The chimpanzees that Gordon Gallup studied learned to use mirrors to explore their limbs, such as teeth, ears, and anogenital, which they could not see without a mirror. In addition, some chimpanzees reacted by touching areas such as ears and nose, which Gallup had painted with lipstick and pens. (Gallup, 1970 and 1977)

After Gallup's first experiments, many experiments have found the same properties in chimpanzees, bonobos, orangutans, and rarely in gorillas.

5.5 Culture: In mice that can not only learn by themselves and learn from their mistakes but also learn from the experiences of other animals, the behavior learned by a single individual can spread to the whole group through copying and imitation. In fact, this vital knowledge can be transferred from generation to generation. Therefore, mice are considered to have the essential qualities of "culture" or "tradition." (Dawkins, 2000)

The origin of the culture in mouse populations is that mice are very social animals, and humans do not want mice in their habitat. Mice have also resisted with great skill every time humans have fought against mice. (Dawkins, 2000)

Warfarin and similar poisons used in the fight against mice prevent blood clotting and cause animals to die from internal bleeding. Over time, mice developed resistance to these poisons and began not to bleed internally even though they ate the poison. The blood of a small number of mice naturally retained its clotting property despite the presence of an anticoagulant. These mice had a much higher chance of survival than others, and the offspring of resistant individuals multiplied steadily, and new generations of warfarin-resistant mice emerged. In response, new methods were developed to kill mice. And mice resisted every new poison. When the new methods were first used, they destroyed a certain group of mice, but a new generation of resistant mice continued to struggle to survive. It was not only natural selection that protected the rats. Their behavior changed, making them less likely to eat the poison. In some areas, such as the south of England, it was impossible to control the mouse population even with the new and improved poisons. On a farm in Hampshire, only one-third of the rats were successfully killed in 14 days. (Dawkins, 2000)

To understand the behavior of the rats on this farm, Clair Brunton and David Macdonald of the University of Oxford placed small transmitters on the mice on the farm. And it turned out that the rats preferred not to eat the new poisonous food but to eat the non-toxic food they recognized, even though the food was further away. Mice who were wary of the new food and preferred to eat food they recognized survived, and their offspring carrying this behavior formed the next

generation. In this case, while conservatism is rewarded, a willingness to innovate or excessive curiosity leads to the death of the mice. This process is the opposite of learning. The situation appears to be genetic selection related to the instinct to avoid innovation. But mice exhibit many more complex behaviors. (Dawkins, 2000)

Bennet Galef of McMaster University has demonstrated the ability of mice to learn, even from each other, through experiments with white lab rats. These experiments showed that the mice were using each other as subjects to find out which foods were harmless and which were poisonous. (Dawkins, 2000)

Galef put the rats in cages as couples, allowing them to get to know each other intimately. The couples in the cage were sniffing, cleaning each other, and sleeping in close physical contact. Galef removed one of the mice from the cage, removed it from its partner, and gave it a different food. He then put it back with its partner in the cage, watching how that experience affected the partner that never left the cage. He gave the mouse, which he took out of the cage, the "practitioner," a distinctly fragrant food, such as cocoa or cinnamon, that neither of the mice in the cage had eaten before and knew the smell of. The mouse in the cage, which he called the "observer," could neither see nor smell what was happening outside. When the practitioner mouse was put back in the cage, the observer engaged in an intense cleaning and sniffing action on the practitioner, explicitly targeting its mouth and whiskers. After allowing this contact to last for about 15 minutes, Galef took out the observer mouse, which he had previously left in the cage, giving it distinctly fragrant food it had never encountered. One of them was the food that the practicing mouse had eaten before. The observer mouse ate what the practitioner mouse ate. The observer mouse had not seen what the practitioner mouse was eating but had preferred to smell and eat the food. The observer mouse imitated another mouse by eating what the practitioner ate. Thus, it figured that if the other mouse ate a portion of the new food and was still alive, it was not harmful and was safe to eat. (Dawkins, 2000)

Galef also showed the opposite result of the experiment, revealing that if the practitioner mouse looked sick, the observer did not eat the food he smelled on it. Again, he took one of the rats who knew each other out as a practitioner and gave it water with saccharine, which was not nutritious, but it was something the other mice

also knew and loved very much. The practitioner drank the saccharine water without hesitation. Galef soon gave the practitioner mouse lithium chloride, a chemical compound that would make it feel bad, and put it next to the observer mouse in the cage. The rats again became intimate with each other by cleansing and smelling each other. Two hours later, the two rats were moved away so they could not see each other, and saccharin was given again. The practitioner mouse, who had previously been sick with lithium chloride, did not drink most of the saccharine water. The same mouse drank different melts, showing its reluctance was against saccharin, not against the rest. (Dawkins, 2000)

But what was interesting was the behavior of the observer mouse. It was reluctant to drink the saccharine water it had previously enjoyed. Although the practitioner could not see the mouse, it acted just like its friend by rejecting a food he had previously loved. The practitioner drank perhaps a little more than the mouse and rejected the rest. The odor or strange behavior of its friend led to this reluctance. Galef's experiments show that mice can distinguish between a healthy individual and a sick one, which is homonymous. (Dawkins, 2000)

Although transferring information from one animal to another about which food is dangerous and which is safe to eat is a direct example of "collective learning," culture has a broader meaning, such as a generation that transfers its knowledge to the next generation through non-genetic means. The cautious behavior of the mother mouse towards new food can also occur in offspring. If the offspring did not learn to behave cautiously from their mother, this could not be called culture if the behavior was genetically transmitted to the offspring. On the other hand, if the mother learns something throughout her life, and the offspring learns this from her and apply it to their own lives, it can be said that there is a simple form of cultural transfer here. (Dawkins, 2000)

5.6 Language: It is also essential to find signs of language in animals other than humans to connect the result to art. One of the most common attributes of art is that it is a means of communication. In this sense, art is a much more effective tool than words and sentences that express feelings and thoughts that are inadequate with language. According to physiologist William Noble and archaeologist Iain Davidson, symbols go beyond words. According to them, the key event in a language is the

ability to present the signs in symbolic form. The emergence of modern language dates back to the time when cave paintings began to appear about 40,000 years ago. Pictures and other depictions mean that living beings are aware of themselves and their environment and demonstrate their ability to express this awareness symbolically. Noble and Dawidson suggest that the greatest evolutionary development in brain capacity occurred just before or simultaneously with the first expression of art. (Wall, 2013)

It is necessary to consider the communication skills of other species in order to evaluate whether the origin of the language is in non-human animals. Charles Hockett has identified several language-specific design features with which the skills of non-human primates can also be assessed. Some of these features are the most voice-dependent communication systems. Frans B.M. de Wall is one of the most famous primatologists of our time, who has investigated the relationship between the production and perception of speech sounds by humans and whether it was a similar process for other animals to perceive their sounds. Referring also to the language-specific design features developed by Hockett, Wall found remarkable similarities between humans and chimpanzees in their potential to produce most speech sounds. Since there are very few phonemes in some human languages, such as Rotoka and Mura languages, theoretically, it should be possible for chimpanzees to create a spoken language that humans can understand. Although chimpanzees are anatomically similar to humans, their inability to speak cannot be explained by simply pointing out the anatomical structure of the vocal canal. The reason why chimpanzees cannot speak may be related to the motor control system, the instinctive system, or cognitive abilities. Complex communication systems based on vision and hand gestures may allow them to communicate. When we look at the language skills of apes that use or point to computer symbols, it can be seen that their vocabulary has an upper limit. Of 150-200 signs or lexigrams[12], this limit is two or three elements for word sequences. These findings suggest that there are fundamental cognitive distinctions between believers and other apes that limit speech, development, and expression of language. (Wall, 2013)

[12]Lexigram: Formal expressions found in an artificial language called "Yerkish" used to study the formation and functioning of language in primates.

It was believed that a unique form. of perception, called categorical perception[13], was specific to language speakers. Numerous studies in the mid-1980s have weakened the view that categorical perception is unique to people who speak. First, it was understood that babies had a categorical perception in the pre-speech period. Subsequent studies have shown that species such as chinchillas, macaques, and Japanese quails have also been shown to categorize speech sounds produced by combining them as humans do. It has been observed that categorical perception exists in many different animal species other than humans. (Wall, 2013)

A communication system includes three distinct components: the generation of signs, the use of signs in the appropriate context, and the response to the signals of others. When all aspects of communication are considered, it is suggested that primate studies will show significant parallelism with human language development. (Wall, 2013)

After studies, it was seen that there were moderate language-related developments and competencies between other animals and humans. Most of Hockett's design features are seen in some non-human species, and his capacity for perception of speech sounds was found to be quite old in genealogy. Considering the role played by babysitters in shaping communication skills, numerous examples have been found between humans and other species showing parallelism in the ontogenesis of sound production, perception, and use. It is now understood that giant apes express some of the cognitive skills thought to be necessary for language through their behavior. According to several research results, it is argued that chimpanzees living in their natural environment depict the tool use pattern and the syntax skill in the language. In short, we can suggest that it is possible to see the findings of the origins of syntax skills in apes. (Wall, 2013)

[13]Categorical Perception: It is a psychophysical phenomenon that occurs when a continuous change in a physical stimulus is perceived as discontinuous - in other words, kaegorical. (Işık, 2021)

6. THE ORIGIN OF ART IN ANIMALS OTHER THAN HUMANS

Contemporary studies of animal behavior have significantly reduced the number of behaviors and traits that distinguish humans from animals and have shown that many of the supposed differences between humans and animals are merely differences of degree. For example, vervet monkeys show a primitive language, wolves and chimpanzees show genocidal actions, ducks and orangutans show sexual assault, and ants show regular signs of warfare and enslavement. (Diamond, 2006).

The previous chapter mentioned that animals have more primitive versions of emotions and behaviors that make humans privileged. Whether an action is an act of art or an object is a work of art is a debated topic in art history, starting from cave paintings. However, when it comes to art, emotion is first expected. The artist, who is aware of their self-consciousness, is expected to start producing art as a result of being touched by emotion, and the viewer expects to feel an emotion from that artistic object. Following this, art production requires technology, which, in the simplest terms, is the ability to use tools. Now, the object that the artist who is aware of their self-consciousness and started producing it while putting their thoughts and feelings with their technological competence and talent has become a communication tool. Environmental conditions, access to technology, and differences in products emerging depending on the values and judgments of individuals constituting the society also generate the culture. So far, it can be said that animals may be able to create art according to their competence. However, can that action be called “art” and the result “a work of art”?

Just as animal nature is the road to understanding human nature, human nature is the road to understanding animal nature. Because humans are not independent creatures that continue their existence by detaching themselves from nature or other animals, with this point of view, many long-term studies have been carried out with other animals and continue.

The Gorilla Foundation carried out one of the longest studies on gorillas. In 1972, at San Francisco Zoo, Koko, a baby Gorilla separated from her mother at one, was loaned to Dr. Penny Patterson (b.1947) with the condition of living at least four

years together as part of her studies at Stanford University. In 1976, among its founders, she joined the Gorilla Foundation permanently, where Dr. Patterson is also present. Until she died in 2018 at 46, Koko worked for the Gorilla Foundation. Two gorillas, Michael in 1976 and Ndume in 1991, joined the foundation's work. In line with long-term studies, new information about Gorillas was obtained. Studies with Koko, an extraordinary gorilla, showed us that gorillas could learn and use sign language, develop self-awareness, and even draw with colors to express themselves. Koko learned to paint by expressing her thoughts and feelings with colors and shapes. She could paint her emotions, like “love” or the objects she saw as “birds.” A bird that fell from its nest in a storm and was rescued by her caretakers became Koko's friend, and she also painted this bluebird. (https://www.koko.org/about/)

Image 1: “Bird” Koko’s picture, named after the bird that visited her.

(Paint Like Koko – The Gorilla Foundation)

Image 2: “Love” by Koko

(Paint Like Koko – The Gorilla Foundation)

Although Dr. Penny Patterson's work with Gorillas Koko, Ndume, and Michael yielded important results, she could not clearly explain the size of the pictures and drawings made by gorillas because the main area of her work was with the use of sign language by gorillas. But one remarkable study records significant findings regarding chimpanzees' creation and their views of “Ars gratia artis.” Zoologist Desmond Morris (b.1924), a surrealist artist, published his works with the chimpanzee Congo between 1956-1959 in his books. Morris's book “The Biology of Art,” the first edition of which was published in 1962, includes his long-term studies on the monkeys' painting tendencies and abilities.

Image 3: Chimpanzee Congo and Desmond Morris

(https://evrimagaci.org/ressam-sempanze-congo-4753, accessed07.01.2023)

Chosen from the London Zoo for his precocious personality, Congo the Chimpanzee has produced over 400 paintings with pastel, pencil, and paint and showed that he did this with skill and enthusiasm. Morris described this period as "the peak phase," which Congo attributed to experimenting with balancing forms, creating repetitive motifs, and giving ever-increasing details to the repeating shapes he created and enjoyed creating. Congo stopped painting when he thought his painting was complete, an indication of his autarchy over the color palette. Morris saw this progress as evidence of the innate drive of primates, and thus humans, to form and play with visual patterns. (https://www.mayorgallery.com/artists/227-congo/)

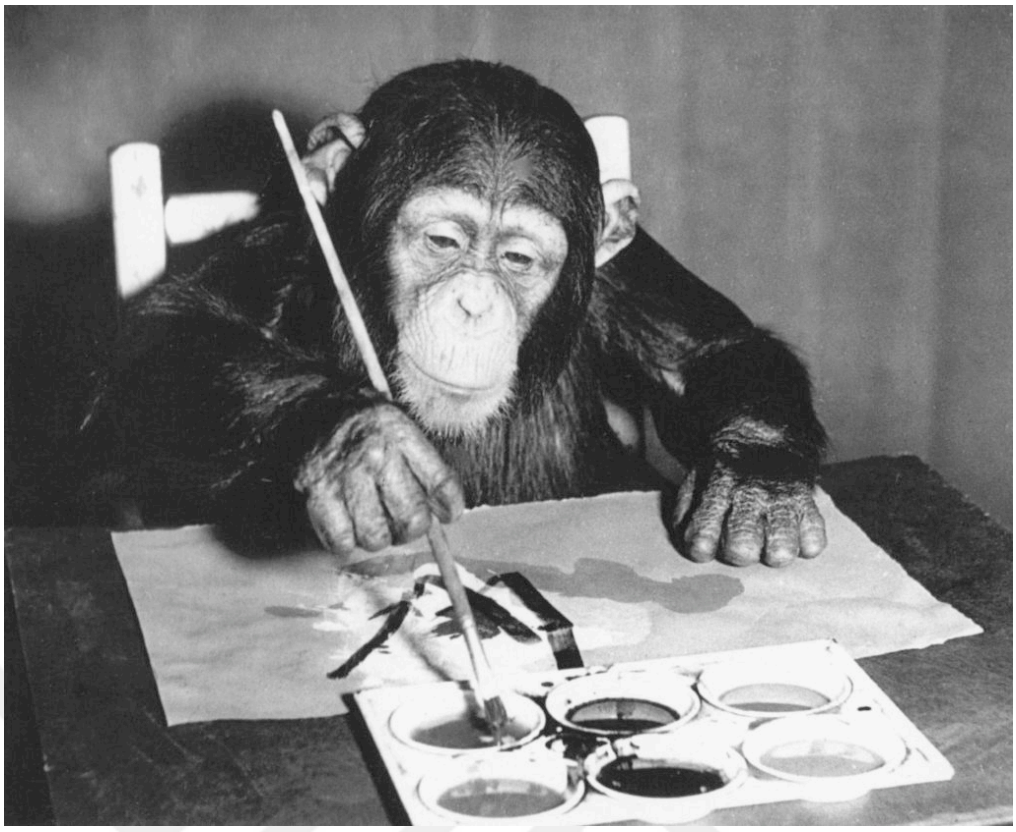


Image 4: Chimpanzee Congo (https://www.mayorgallery.com/artists/227-congo, accessed 07.01.2023)

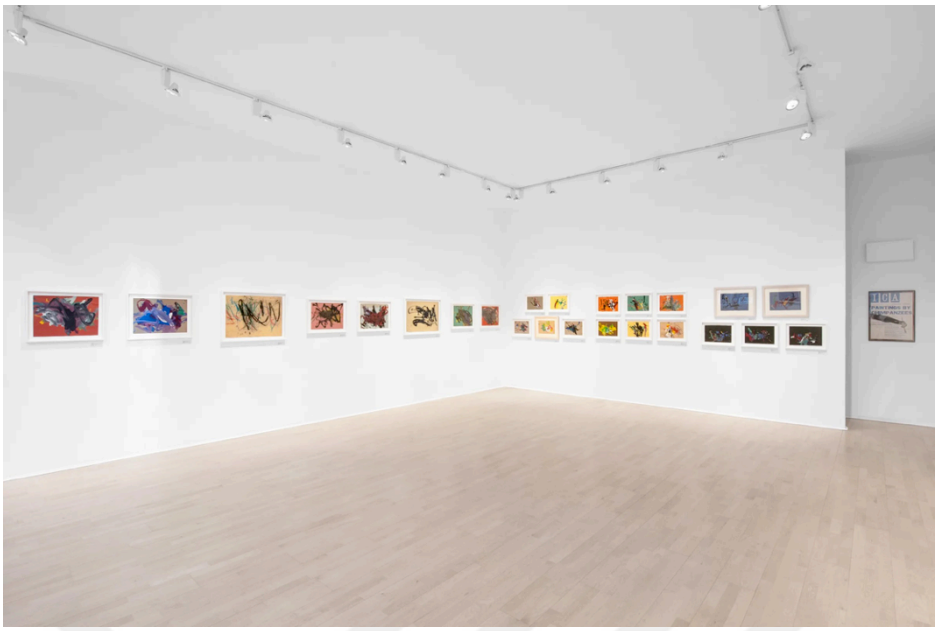


Image 5. The "Birth of Art" exhibition featuring paintings of Congo the chimpanzee, The Mayor Gallery, London, 3-19 December 2019

(https://www.mayorgallery.com/exhibitions/549-congo-the-chimpanzee-the-birth- of-art/, accessed 07.01.2023)

World-renowned artist Joan Miró exchanged a painting of Congo the Chimpanzee for two of his paintings. Pablo Picasso, who has a painting of Congo, also stated that he is proud of this situation.

Taking place as one of the artists of The Mayor Gallery in London, Congo's works were exhibited in 2019 under the name "The Birth of Art." (https://www.mayorgallery.com/exhibitions/549-congo-the-chimpanzee-the-birth-of-art/)

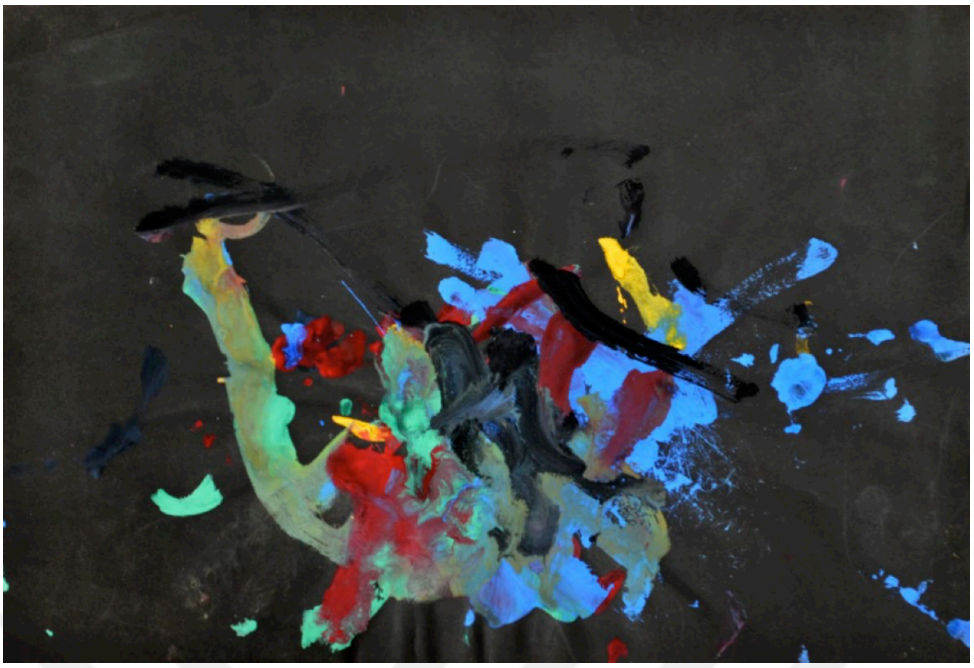


Image 6: The work of Congo the Chimpanzee

(https://www.mayorgallery.com/artists/227-congo/ , erişim tarihi: 07.01.2023)

7. EVOLUTIONARY FOUNDATIONS OF COLOUR PERCEPTION

Colors are considered a physical structure of nature, with a definition or perception valid everywhere in the universe. However, there is nothing that can be defined as color in nature. Color perception is a virtual perception developed to distinguish the wavelengths of the rays coming from the Sun and to define objects. The perception of colors is a product of the evolutionary process.

The definition of "Color" in the Current Turkish Dictionary of the Turkish Language Association is "the sensation created in the eye by the light reflected by the objects." Orhan Hancerlioglu defines "Color" in his dictionary "*Felsefe Sozlugu*" (Dictionary for Philosophy) as "the visual sensation arising from the diversity of refraction and propagation of light on objects." Ancient philosophers stated that color was a fundamental property of objects. The first philosopher to say that objects do not have colors per se and that "color is a sensation related to light" is Epicurus. And the first person to scientifically analyze color was Isaac NEWTON (1643-1727). According to Tyndall, who evaluated the data in Newton's *Opticks*: "The concept of color is the process that light undergoes. This process occurs both with the light source and with the effect of the object it hits, and different colors are formed."

Based on these definitions, it is necessary to trace the origin of color to the emergence of light.

The first universal material as an element is hydrogen. Hydrogen atoms were formed in the first three seconds after the Big Bang. Hydrogen formed stars and used them as fuel, and with the conversion of hydrogen, helium and later carbon were formed. About 5.5 billion years ago, a giant fire sphere with a diameter of about 1.5 million km was formed by the condensation of gas masses composed of hydrogen molecules in a specific place. We named this sphere the "Sun." The rays with high-energy particles, which emerged as a result of atomic chain reactions in the Sun, formed the source of the colors. At 15 million degrees, the Sun's environment contains only alpha, beta, gamma, and other high-energy rays. If we look at the center of the Sun with the naked eye, we can only see pitch-black darkness around the sphere in which these chain reactions take place because living beings formed on Earth do not have sense organs to perceive these rays. The transformation of these

rays, their perception, and their use by living beings result from an evolutionary process of approximately 5 billion years. (Demirsoy, 2017)

Since the rays with high-energy particles in the Sun's center have the energy capacity to destroy polymers, their contact with living beings can be disastrous. For this reason, according to current knowledge, life with a complex system cannot form anywhere in the universe where these rays emanate directly. (Demirsoy, 2017)

The sunlight we see today was created about 10,000,000 years ago. In the process, high-energy particles are softened by the dense layer of the mantle through several physical interactions, filed, and converted into energy-level rays that will not destroy polymers; in other words, visible rays, as well as a set of high-energy particles, and released into space. (Demirsoy, 2017)

A portion of 0.0001 of the rays emanating from the Sun reaches the Earth. These rays pass through the filter of magnetic fields called Allen-I and Allen-II Belts, which emerge between the Earth's solid sphere and the liquid sphere as a result of the gravitational effect of the Moon on land, and the tidal waves hitting the eastern shores. Since there will be no effective magnetic fields on a planet without a moon, the living beings on that planet cannot be protected from the destructive light of the star. The Sun's rays are first filtered in Allen-I, and the rest are filtered in Allen-II. Both permeate discharge to the Earth in the form of aurora borealis. Aurora borealis are formed when high-energy rays strike oxygen atoms. The remaining rays make their way to the Earth's surface. (Demirsoy, 2017)

About 3.8 billion years ago, with the first oceans appearing, blue skies, rain, clouds, and water basins began to form for the first time. Sun rays, passing through the clear atmosphere, begin to reach the surface of the oceans. When rays hit the water surface in a certain range, they cause photodissociation (molecular separation with light energy), that is, the separation of hydrogen and oxygen atoms of water molecules. Some released oxygen rose to the upper atmosphere and turned into ozone, resulting in the "Ozone Layer," an effective filter for ultraviolet rays. (Demirsoy, 2017)

This ozone layer only left 380 to 720-nanometer wavelength part of a broad spectrum unfiltered. Most light waves pass through the blue, green, and red. And

aside from those, some infrared, ultraviolet, and radio waves held the rest. Today, the feature of this filter is the reason we can perceive a narrow region of the spectrum of the rays coming from the Sun, the colors we can see limited colors such as blue, green, and red. For this reason, living beings only have blue, green, and red photoreceptors (color receptors). (Demirsoy, 2017)

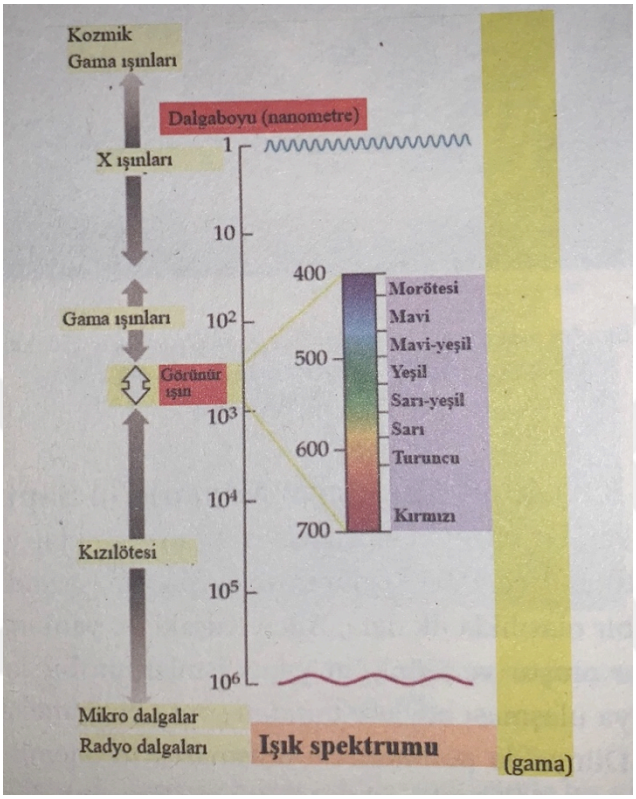


Image 7 The profile of the Sun's rays that come out of the Sun and reach the Allen Belts, the ozone layer, and the part that falls within our limits of perception: Visible Ray Waves (Demirsoy, 2017 P:32)

Since they had no problem with the presence of other living beings, these asexually reproducing proto-animalistic creatures did not need any sight since they did not have to worry about detecting other creatures. These first proto-animalistic creatures found their food by chemical means, namely by smell and taste receptors. At first, the body color of proto-animalistic creatures was limited to the color of the structural proteins, sugars, and other building molecules they carried. When evaluated with our eyes today, these colors were composed of natural molecular colors, such as dull transparent or yellowish brown. Since a living thing that

perceived color had yet to evolve, molecules for color had not developed either. It can be said that color is the definition of a conscious creature. (Demirsoy, 2017)

When the first proto-animalistic creatures consumed the inorganic synthesized and accumulated molecules on which they were fed, the first famine occurred in the living world. Those who added the porphyrin molecule “chlorophyll” to the cell membrane during this famine continued to live. The creature, which has the chlorophyll molecule, managed to obtain the proton it needed from water by breaking it down using the Sun's rays and survived. Thus, life escaped extinction, and two types remained in the environment. The first is photosynthetic bacteria that can synthesize the substances they need using solar energy, that is, the ancestor of plants; the other is the more giant animalistic monocellular creatures that feed over them, that is, the ancestor of animals. Because animalistic monocellular organisms can find what they are looking for by chemical means, their eyesight has yet to develop. Their color is either transparent or the natural color of molecules, as in they do not have pigments. However, since the chlorophyll molecule reflects only the part of the Sun's rays that corresponds to what we call green without absorbing, photosynthetic organisms have begun to appear dark brown. Still, more commonly green, and occasionally blue, in warm and mineral waters, and the world’s seas have turned only blue and green. (Demirsoy, 2017)

About 600 million years ago, algae began to go ashore in ponds and semi-wet habitats formed by masses on the coastal parts of the continents. On the one hand, the liverworts, which were only green in color and reproduced with sperm swimming in the water, went ashore following the wet streams; on the other hand, the lichens started to climb the rocks. While the lichens broke the rocks and prepared the soil formation, algae and lichens caused the Earth's surface to turn green. (Demirsoy, 2017)

As the main continent called Pangaea crumbled and formed baby continents, various climatic zones and areas and climates were formed. This topographical diversification led to species diversification in living beings, and the explosive evolution of color, animal, and plant varieties began with these movements. (Demirsoy, 2017)

In the early stages of the Cambrian period, spore reproduction was sufficient for the continuation of life since the climate was hot and rainy throughout the year. In the last periods of the Cambrian, germination began to fail in some seasons as droughts began to be experienced. Thus, some of the sporulated plants managed to make seeds at a primitive level seasonally. As a result, the seeds that could germinate at every moment disappeared, and the seeds that could germinate at a set season of the year evolved. (Demirsoy, 2017)

Thus, transitions from sports to seeds have been made with cyclamen and similar plants. Even if it is not colorful, cyclamen and palm-like plants have started flower formation. (Demirsoy, 2017)

With climates, first seed plants and then flowering plants evolved. Accordingly, holometabolic insects (bees, butterflies, flies, etc.) evolved from hemimetabolic insects (cockroaches, grasshoppers, etc.). This is the first-time seed plants have evolved. For the first time, mutual aid developed between animals and plants, such as symbiosis. (Demirsoy, 2017)

Until this period, the world was painted only green. When plants sought to disperse their pollen with the help of an intermediary because their reproductive period was trapped in a certain season, they began to use insects and then birds and mammals for this task; only then the world turned into a riot of colors. (Demirsoy, 2017)

While seeds were formed in one or several species of seeded plants, a coloration different than green occurred, likely to mutation. Although it has yet to be discovered exactly what the first color is, it is estimated to be yellow. Because yellow is thought to be the first color to appear because it creates a contrast over green. (Demirsoy, 2017)

At this stage, mutual assistance developed between the holometabolic insects and the plants, called symbiosis. It can be said that the coloring of the world started with insect-plant symbiosis. (Demirsoy, 2017)

All plants took various colors and shapes to attract these insects. The order in which the colors appear is currently unclear. However, how the evolutionary

process works can be explained. In an environment where the first color after green is yellow, as estimated, some yellow colors have started to develop paler, and some yellow colors have started to develop brighter. In this yellow-covered environment, flowers with more vibrant and bright yellow succeed in attracting insects. Of course, there will also be insects that prefer pale yellow flowers. Thus, variations of advantageous behaviors, colors, and shapes for both election and selection emerge. When a mutation results in the appearance of a different color, for example, the color red, in this environment, insects that have developed a behavior of turning to different and more noticeable colors will turn to the red flower and ensure that the red flowers also multiply. In this way, many colors that succeed in natural selection in the evolutionary process emerge and continue to exist, and the failed color variations may have disappeared.

8. HOW DO LIVING BEINGS USE COLORS? HOW DO THEY REACT TO COLORS?

All living beings are in the same base cycle to survive. From the moment they are born, the war of life begins. To survive without being seen by their hunters, they need to develop various tactics, and thanks to these skills, they are saved from being hunted. Next, they need to find food to survive. They must develop the skills to reach the food with the highest nutritional value with the least effort and against all dangers. Individuals who can survive must reproduce and maintain their lineage. They find the most suitable spouse for them and bring new generations to life. They compete with their sex to be selected by the opposite sex and try to stand out. Finally, they must prepare a shelter for their offspring and feed them. This cycle goes on as long as the world exists. The basis of their way to winning in this cycle is made out colors they use and their color perception. Living beings use colors to find a mate, defeat their opponent, warn the enemy, or hide from them.

8.1. Food Choice: Plants use colors to spread their pollen or fruit seeds to nature. For example, the fruits that the Toucan bird feeds on are yellowish-green when they are not yet ripe. Ripe fruits turn black. The ability of the Toucan bird to choose between different colors is an important stage in the evolution of color vision. (Thomson S., 2021)

8.2. Sexual Selectivity: Mammals are predominantly nocturnal. They carry out their vital activities at night, hunt, and drink water around water sources. It is not possible to distinguish colors at night. In this case, the ability to distinguish colors may be a question of why it develops. Most mammals come in shades of black, white, or brown. The most obvious exception is the Mandrills, a type of baboon living in the Gabon forests of West Africa. (Thomson S., 2021)

Mandrills live in large groups, usually composed of females and young. Females and young people are both brown. However, men who are plain colored when they are young begin to change their faces with the effect of testosterone as they reach maturity. When they reach sexual maturity, colors begin to appear on their faces. The colors formed on their faces and hips express their health and strength.

Image 8: Mandrill male individual that has not reached maturity (Thomson S., 2021)

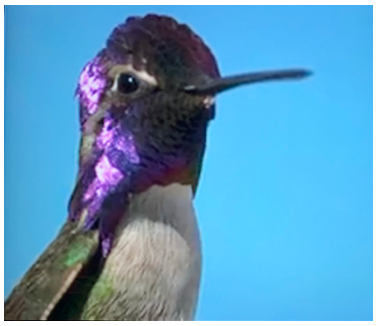
The brightness of the colors indicates their status. The eyes of Mandrills are also sensitive to color. Mandrills see the world the same way we do; they have vision cells sensitive to the three colors. (Thomson S., 2021)

Image 9: Mandrill male individual that has reached maturity (Thomson S., 2021)

Hummingbirds’ eyes are very developed against colors. An excellent color vision for hummingbirds is very important for feeding and males attracting females. (Thomson S., 2021)

Image 10. Costa Hummingbird in deserts of South West America (Thomson S., 2021)

Costa Hummingbirds, which live in the deserts of Southwest America, are as hard to spot as it is dangerous to them. Having bright and vibrant colors in the open space can also attract unwanted animals' attention and be life-threatening. That's why Costa Hummingbirds have flashing, rotating colors. They do not always display their bright colors but often keep them hidden. When the male individual sees the female hummingbird, he raises his colored feathers and positions them towards the Sun, showing the female their bright colors. (Thomson S., 2021)



Images 11 and 12. The attractive colors of the male Costa Hummingbird when angled towards the Sun (Thomson S., 2021)

Birds in dark forests have developed different strategies than hummingbirds. The Birds-of-Paradise that live in the rainforests of New Guinea are examples of birds that live in a black forest. In the dense forests of New Guinea, there are rare small gaps where sunlight can reach the forest floor. Birds-of-Paradise also perform their shows in these spaces. Since it will be more prominent in flat brown soil, the birds clean the soil surface before starting their show, especially removing green colors from the environment. He presents his show to the female in an environment he prepares almost like a stage. The female Bird-of-Paradise follows the male performing around a branch, viewing from the top. The bright, vibrant colors of the male against the brown background are extremely striking and attractive when viewed from above. (Thomson S., 2021)

Image 13: The Bird-of-Paradise, which woos the female while the female is watching him from above (Thomson S., 2021)

Another bird with attractive colors, the Flamingos, breeds in salt flats and sodic lakes. Flamingos have white hairs when they first grow. The source of the pink color of flamingos is their food. The salty waters they feed on are rich in shrimps and algae containing red pigment called carotene. Over time, carotenes accumulate in their feathers, giving flamingos bright pink feathers. Young flamingos take about five years to take on the color pink. The newly egg-laid flamingos are also white. It takes time for it to be ready to reproduce and become pink. The colors of flamingos are a sign that they are physically fit and strong. The one with the brightest color also has reproductive priority. (Thomson S., 2021)

8.3. Defense, Warning: Frog colors in the rainforests of Central America are used as a warning. Its skin is full of glands that produce deadly poison, and its red color conveys the message that it is deadly. Predators perceive the color of the Strawberry Poison Dart Frog as a warning and stay away from it. The brighter the color of a frog, the more poisonous it is. The color also shows its power to other men. Male individuals do not challenge other men of a brighter color than themselves. In addition, females also choose the brightest-colored male frog to mate with. For frogs, colors are vital in every aspect of their lives. For protection, they use it to defeat opponents and find mates. For these frogs, life means color. (Thomson S., 2021)

Image 14. Strawberry Poison Dart Frog (Thomson S., 2021)

8.4. Hiding and Getting Lost in the Environment:

8.4.1. To Hide: The Bengal Tiger lives in the forests of Central India. There must be a few meters of distance between the prey and the prey to catch it. That's why he has to hide and get close to his prey. Since we have three types of color receptors, we can easily see the Bengal Tiger. However, since there are only two types of color receptors in the eyes of the prey, Spotted Deer, cannot see their prey. In other words, deer have red-orange color blindness. According to deer, the orange color of the tiger is a shade of green. (Green, N., 2021)

Image 15. The appearance of the environment from the human eye (Green, N., 2021)

Image 16. The view of the environment of deer (Green, N., 2021)

Snow Chickens living in the Cairngorm Mountains of Scotland change color and camouflage themselves according to their environment. They do not stand out in stony and shrubbery areas with their brown feathers. However, in winter, the environment can be covered with snow on a single night. Snow Hens adapt to the environment by shedding their brown feathers and wearing white feathers. This allows them to hide unnoticed. Even sharp-eyed eagles cannot see Snow Chickens. Snow Chickens and other animals, such as Polar Foxes, Ferrets, and Snow-Shoe Rabbits, change their fur when winter comes. Changing color with the seasons is the only way for some animals to avoid becoming prey. (Green, N., 2021)

8.4.2. To Confuse: Zebras roaming the open meadows of Masai Mara immediately stood out by their black-and-white striped colors. While other animals living in the same area have more harmonious colors with the environment, Zebras immediately attract attention with their black-and-white striped patterns. However, these patterns of zebras are their defense mechanisms. Black and white are two contrasting colors, and the pattern of each zebra is different from the other, like a fingerprint. When zebras move together, their patterns blend. This is called the "Illusion of Motion." This makes it difficult for the hunter to focus on a single target. The patterns protect from another pest, flies, just as it protects zebras from predators. These patterns are thought to create a visual blur for flies. The striped patterns of zebras create an optical illusion that helps protect them from large and small enemies. (Green, N., 2021)

There are no identical individuals in the Cuban Painted Snails. Each individual in this species has different colors and patterns. Thanks to these never-before-seen colors and patterns, they avoid being recognized by their hunters, who carry the image of prey on their heads. (Green, N., 2021)

Image 17. Cuban Painted Snail (Polymita Picta)

(https://www.monaconatureencyclopedia.com/polymita-picta/?lang=en)

8.4.3. To Imitate: Some colors and shapes have a cautionary meaning. For example, the color red warns that the creature is poisonous. Therefore, some creatures avoid predators by mimicking the color red or the shape of another species that is not poisonous.

The non-poisonous Danaid Butterfly imitates the color and pattern of the Sultan Butterfly, which is poisonous and not to be eaten. Their appearance is the same; it is impossible to distinguish the difference by eye. (Green, N., 2021)

Image 18. Sultan (African Queen) Butterfly (Green, N., 2021)

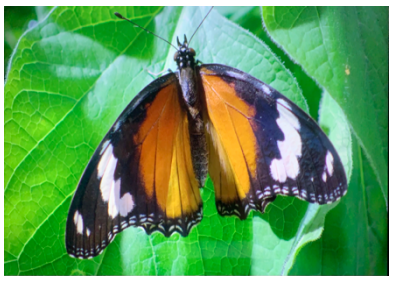


Image 19. Hypolimnas (Danaid) Butterfly (Green, N., 2021)

Flower Flies also mimic the warning colors and shape of stinging Honey Bees to avoid defeat. From the Praying Mantis, which resembles the color and shape of a leaf, to the moth, which resembles the shape of the branch on which it lives, and

to the caterpillar, which resembles a small snake, many animals use imitation methods as such. (Green, N., 2021)

The Pin-tailed Vidua Bird, which imitates the young Mumgaga Birds, is an impressive example of the effect of imitation on survival success. The Pin-Tailed Viduas drop their offspring into the nest of the Mumgagas, which feeds their offspring. Mother Mumgaga feeds her offspring as well as the offspring of Pin-tailed Vidua. Mumgagas recognize their young by the patterns in their mouths and the black-and-white patterns unique to their species. Juvenile Vidua also feeds and grows in this nest by tumbling these patterns of Mumgaga juvenile. (Green, N., 2021)

8.5. Attractiveness of red: In previous examples, examples were given that the red color acts as a warning. The bright red and orange colors of Poison Arrow Frogs send a message that they are extremely poisonous. Researchers have shown that color has something to do with toxicity. Those with more matte and camouflage colors are less poisonous, while those with red and orange show their predators that they are extremely poisonous without being attacked. (Appleby, B., 2021)

At the University of Florida, Dr. Lisa TAYLOR studied Habronattus spiders, a bouncing spider with more than six thousand species. These spider species can see all colors, from ultraviolet to red. The face of the males of this spider species is bright red. Through various experiments, Dr. TAYLOR investigates why these men have red faces. Males use colors, which is also a classic way to attract females. Those with the brightest, most vibrant colors attract females more. But the females of this spider species are extremely predatory and voracious. They go after anything that moves, catching prey even bigger than themselves. A male must take this into account when courting a female. So, if the female does not accept the male as a wife, she will eat the male. This is why redness on the face of the male spider is vital. Red is a color that attracts immediate attention in most backgrounds. Most living beings, including us, use and perceive red as a warning of danger. In Habronattus, this means the difference between life and death. As soon as the male meets the female, he has a very limited time to impress the female. Because the female can attack him quickly. The red color on men’s faces helps them gain a few extra seconds. The male buys a

few seconds before the female eats it. It may indicate that you are a spouse, not a meal, during this time. (Appleby, B., 2021)

8.6. Polarized Light: Fiddler Crabs use polarized light to signal to each other. P polarized light allows crabs to choose their potential mates, rivals, and predators. (Appleby, B., 2021)

Mantis Shrimps have been found to have bright stripes on the tail, which can be seen in polarized light and can only be detected by cameras that can record specialized polarized light, which is not seen in normal light. The light above the ocean is not polarized. Unlike Fiddler Crabs, Mantis Shrimps use polarization to stand out on the non-polarized ground. (Appleby, B., 2021)

8.7. Neon Colors: There is a symbiotic relationship between corals and the algae living on them. It is these algae that are on the corals that give them their flamboyant, eye-catching colorful appearance. These algae are called “Symbion.” While the algae photosynthesize during daylight hours, they use sunlight to grow and secrete sugar as a byproduct. Corals also absorb these sugars. This symbiotic system has existed since the time of the dinosaurs. However, the change in seawater temperature affects this system. When seawater temperatures exceed the critical point, the photosynthesis mechanism of common life algae (algae symbiotes) is disrupted. They start producing toxic substances. This causes the corals to expel them from their tissues. So, the coral loses its color and turns gray, and sometimes those gray corals die. In the last 15 years, almost half of the corals found in the Great Barrier Reef have died this way, and the ecosystem has deteriorated. In the last ten years, it has been reported that corals have developed a phosphorous color in various parts of the world. Corals that lost their common life algae began to produce bright neon green pigments instead of turning white. By producing these pigments, coral protects the algae remaining inside its tissue from excessive light tension, which acts as a kind of sunscreen cream for living algae. This helps the graying corals recover their food source and color by restoring their common life algae and healing. (Appleby, B., 2021)

8.8. Irradiation: Bioluminescence is the generation and proliferation of light by a living being. They do this to attract the spouses' attention and get a better view of their prey during night hunts. Some animals also use it as a defense

mechanism to scare off predators. Comb jellyfish is a species that has been around for at least 500 million years. The sea butterfly is also a species that emits bio-light. (Edgington, A., Labracio, J., 2020a)

8.9. Decoration: The Bowerbird, which lives in Australia, builds a nest called “maypole bowers” to impress the female. To decorate this nest, it uses bones, shells, sticks, or even blue-colored garbage (such as plastic water bottle caps). The Bowerbird makes these sticks and decorations to create a perspective that will make them look bigger than they are when viewed from the inside. (Edgington, A., Labracio, J., (2020b),

Image 20. The Bowerbird and its nest (Edgington, A., Labracio, J., (2020b)

As can be seen, whatever the reason (Sexual selectivity, food selection, defense), there is a negative or positive relationship of choosing and being chosen between living beings. While the chosen one tries to be the one or not with their colors and patterns, the choosing one tries to make the right choice. In this cycle, aesthetic perception and aesthetic impulses are observed in animal behavior in response to an impulse to reveal aesthetically and to be liked.

9. EFFECTS OF SELECTION MECHANISMS ON AESTHETIC PERCEPTION OF LIVING BEINGS:

In the dictionary of the Turkish Language Association, the first definition of "beautiful" is "pleasing to the eye and sound, admirable, anti-unseemly," and the second definition is "good, pleasant."

In Ahmet Cevizci's "*Dictionary of Philosophy*," "beauty" is defined as "a basic feature of an object that leads to a sense of pleasure or aesthetic appreciation in the subject. It is a harmonious and orderly whole created by pleasing and splendid forms and measures that are appreciated through the senses of sight and hearing. Proportion pleases the senses or the mind through competence, simplicity, unity, and degree, creating a sense of aesthetic appreciation in man."

What beauty is has been debated throughout the history of philosophy as a quality that exists in nature and man-made products. According to ancient philosophers, beauty can be defined. It is reduced to the unity of qualities such as beauty, order, unity, harmony, proportion, measure, and righteousness. According to some modern philosophers, beauty cannot be defined.

Early and Middle Ages philosophy considered beauty as an "objective quality." In contrast, in Modern philosophy, beauty was evaluated more subjectively, and was argued that beauty was a relative concept, not an absolute one. Beauty is the result of our way of looking at things in a certain way, and it has been argued that it is a subject especially related to one's sense of appreciation.

As can be seen, a common opinion has not been reached on what beauty and being beautiful is. Some visual aesthetic rules such as the golden ratio, 1/3 rule, and open-closed composition that can be accepted by everyone regarding beauty have been put forward. However, no clear explanation has ever been given as to why an object found beautiful is beautiful and why the recipient likes that object.

There is a relationship between beauty and goodness, or ugliness and evil, regarding what is beneficial or harmful. The concept of "beautiful" is an adjective used to express a pleasant object. In this respect, what is beautiful is equal to what is good. What is good is what drives our desire. Virtuous behavior that requires

sacrifice for others is also described as good. We always appreciate the behavior of heroes who sacrifice themselves to save the lives of others, but we do not feel the desire to sacrifice ourselves. We see such virtuous behavior as the good of others and look at it from a distance. We define the behaviors we prefer to admire rather than do as "virtuous," and we talk about the things to be done as "beautiful." The concept of "beautiful," which includes the good that we try to explain with our evolutionary orientations, is not such a virtuous behavior. However, the concept of "beautiful" makes us inclined to it, arouses desire, and contains the good in it.

"Ugly," which contradicts the concept of "beautiful," is also within the subject of art. If we look at the definition of Ahmet Cevizci again, ugliness in aesthetics is defined as "a concept that is the opposite of beauty, and expresses aesthetic worthlessness where beauty represents aesthetic value." Ugliness is evaluated from two perspectives, one in terms of form and the other in terms of pleasure. According to the pleasure point of view, "where a beautiful object is a source of pleasure for the audience, where the audience likes it; an ugly object leads to feelings of dislike, repulsion, disgust, even loathing, which is the opposite of pleasure in the audience." On the other hand, in the approach that brings the form to the forefront, there is a situation where a work of art does not have the necessary features to be beautiful. In this case, the work is considered ugly.

The concept of beauty has an alluring semantic power. In other words, when we look at a beautiful object, we like it, and we are attracted to its beauty. However, ugliness has the power to be both repulsive and attractive at the same time. Whether ugliness appears in works of art or as part of everyday experience, it has a paradoxical effect due to the fact that the ugliness has an "unattractive," "disgusting" effect, as well as an aesthetically "attractive" effect from time to time, and "gives a certain pleasure to man on the basis of temptation, that is, something that is ugly creates both an unattractive and an attractive effect."

According to Immanuel Kant, who tries to provide a universal explanation to the judgements of aesthetic appreciation; the judgements of appreciation are not inherent in the object itself. The appreciation is not about the object itself but about the object's experience. The object experience is also gained as a result of the perceptions that enable the adaptation of life to the world in which it is located, and

the inferences derived based on the experiences that occur as a result of these perceptions. The subject of Kantian aesthetics is the experience that beauty creates in the subject, not the beauty of the object or whether the object is beautiful. The experience that beauty creates in the subject comes to the fore not because it is individual but because there is intersubjectivity. If beauty is not inherent in an object itself, if the aesthetic appreciation it creates in the subject is mentioned when an object is called beautiful, and if this experience, which manifests itself in the subject, is transcendental, universal, owned by everyone, occurs through abilities, there must be a similarity between the appreciation of beauty of all people. Kant states that there is a "common ground" for the judgements of taste. This ground, which Kant calls "the Common Sense (Sensus Communis)," determines what pleases or dislikes not through concepts but only through the senses and through universal validity.

To be able to find universal answers to the questions about our judgements of aesthetic appreciation that have been discussed throughout the history of philosophy constitutes the main question of Kantian aesthetics. To answer this question, we need to look at human nature and the function of the life cycle of living beings. The Theory of Evolution is like a theory of everything that encompasses all the questions and answers of human life, almost like the "theory of everything" sought in physics. The sexual and natural selection mechanisms of evolution are very powerful vital mechanisms that directly affect our perceptions and aesthetic appreciation judgements that we arrive at as a result of our perceptions.

When the mating behaviors in nature are examined, it is seen that every living creature in the species does not want to mate with every living thing. Individuals have prejudices, preferences, and decisions about whom they want to mate with. In this case, individuals have to make themselves liked by the opposite sex or persuade the opposite sex to unite with them. (Bakırcı, 2018a S:25-73)

The main purpose of sexual selectivity is that the individual can prove to their potential mate candidates that they are superior to other individuals. This is based on a very basic perception: under difficult circumstances, it is probably healthy individuals who can do "impressive" work. For example, having bright colors that can be easily seen by hunters and being able to survive in spite of hunt pressure probably means that the individual is successful. This increases the desire of other

individuals to reproduce with it. Thus, the party making a choice makes the right choice and ensures the continuity of their genes with their offspring. (Bakırcı, 2018a S:25-73)

In order to influence the opposite sex, living beings must evolve with glamorous and bright colors, and the opposite sex must have developed a visual and aesthetic perception that can be influenced by these glamorous and bright colors. Exhibiting and perceiving this beauty in living beings serves the instinct of selection, selection, and, therefore, reproduction.

In Sexual selectivity, two observation-based experiments that will provide an understanding of the bright and attractive colors and the effect of the body structure of living beings can be given as examples:

In the opposite sex, the female who is looking for survival skills finds it by selecting good genes that she can combine with her own. Although older men seem to have proven their ability to live long, they may have survived because they could not afford the dangers necessary to reproduce. Many features, such as strong muscles that show the ability to catch prey and long and strong legs that allow it to escape from its predators, may be proof of its ability to survive. A female will benefit by combining her genes with genes that have such characteristics and by bringing girls and boys into the world where she will have these characteristics. In an environment where male individuals compete with each other to be selected as superior males by females, the best thing a female can do for the continuation of her genes is to be able to make superior-male offspring of the attractiveness that can be selected by females. If the mother is one of the individuals who can win most of her rivalries between men when her son grows up, she may have countless grandchildren. According to a female, one of the most desirable qualities a male can have is sexual attractiveness. When a female mates with an attractive superior male, she has a good chance of having sons and many grandchildren who will be attractive to the females of the next generation. Initially, we might think that females choose males based on clearly beneficial qualities such as strong muscles, but once these characteristics are widely accepted among females of a species, natural selection will only begin to work in favor of these traits because they are attractive. (Dawkins, 2007)

Ornaments, such as the tails of male Birds-of-Paradise, may have evolved through some sort of unstable escape process. In the early days, a longer-than-usual tail was chosen as a preferred trait by females as it indicated a healthy and robust structure. A short tail in a man can be an indicator of vitamin deficiency, as it fails to obtain food. Or maybe the men with short tails were not skilled at running away from hunters. The point to note here is that short-tail does not have to be genetically inherited but is considered an indicator of a genetic deficiency. Whatever the reason, if females in ancient bird species prefer males with longer tails than average, and provided that there are some genetic contributions to the natural diversity of males' tail lengths, this will lead to an increase in the average male tail length in the population over time. Females follow a simple rule of choosing the longtail among all males. Even if the queues are long enough to block the male who will carry them, a female who deviates from this rule is punished by not being able to give birth to long-tailed sons who can survive. Richard Dawkins suggests that this trend goes back to the trend towards longer tails, like fashion in women's clothing or American car designs. This lasts until the disadvantage of having a long tail outweighs the sexual attraction. (Dawkins, 2007)

Amotz Zahavi asserts the “principle of the shackle,” saying that the fact that females try to choose good genes in males opens the door to male deception. Because broad-shouldered powers are advantageous in sexual selectivity, just like using a shoulder pad, if the cost of developing false muscles is less, sexual selectivity will work in favor of false muscle-building genes.

Seen as an advantage of sexual selectivity, males are fond of bright and vibrant colors with sexual attraction, while females are fond of paler colors. Individuals of both sexes do not want to be bait for predators, and there is an evolutionary pressure on both sexes to be fainter. Bright colors attract predators as much as they attract the opposite sex. While the disadvantage of bright color genes is being easy prey against predators, the disadvantage of pale color genes is that they are unlikely to be inherited by the next generation since pale-colored individuals have difficulty in finding a mate. Species are under pressure from both conflicting selections.

As can be seen, very complex evolutionary mechanisms play a role in the behavior of living beings. While the selective side tries to choose the most perfect, the selected side develops various tactics in order to be selected. Here, a creative instinct is also seen in the role that the aesthetic perceptions of living beings play in making the right choice and with the effort to show what is not really “what” by being aware of what features and what is liked by the opposite sex in order to be selected, let us call it cheating or lying.

CHAPTER III

10. SOURCE OF AESTHETIC KNOWLEDGE

AESTHETICS: THE SCIENCE OF SENSORY KNOWLEDGE

Alexander Gottlieb BAUMGARTEN (1714-1762), in the first paragraph of his Aesthetica, defines aesthetics as follows: Aesthetics is the science of sensory knowing (as the theory of the social sciences, as inferior knowing, as the art of thinking the beautiful, and as the art of rational thinking). (Boyacı, 2005. Q:9) Baumgarten calls 'Aesthetics' "the science of a knowledge that is not clear and explicit." He likens this lack of clarity to the time of dawn as it passes from night to morning. Information acquired through the senses is always described as vague, unreliable information.

There has been distrust of knowledge acquired by the senses since ancient philosophers; the senses are misleading, and true knowledge cannot be attained by the senses. Beyond our perceptions, there is a truth that holds true knowledge that we cannot obtain through our senses.

Heraclitus did not give importance to "empirical" or "sensory knowledge." "Your eyes and ears are bad witnesses," he said, advocating rationalism. Heraclitus makes a distinction between "experience or aesthesis(sense)" and "intellectual intuition" or rational understanding in the context of the philosophy of knowledge. It suggests that without the guidance of the mind, the senses cannot give real knowledge to people and that they cannot base human knowledge even if it is a prerequisite from time to time. (Cevizci, 2016)

In addition to these views, there have been ancient philosophers who made a number of biological findings by observing nature and animals and offered a different perspective on the senses and the information obtained through the senses.

Empedocles, one of these philosophers, makes biological explanations in which he reveals that everything that exists is related and that all beings in nature are

in close proximity to each other. Just like Anaximander[14], he suggests that those who are most suitable for survival and those who have the ability to sustain themselves will survive, and those who do not have this skill will disappear in time. (Cevizci, 2016)

According toEmpedocles, the mind is no better than the senses. No matter how weak one may be in reaching an understanding of what exists, one must make use of all means, including the senses, as well as the intellect. As a matter of fact, the senses provide the material and foundation on which the mind will work. (Cevizci, 2016)

According to atomists, who are realists like all Greek philosophers before them, if the beliefs obtained by intellectual intuition or insight or pure thought contradict the beliefs that are the work of sense perception, the first ones should be rejected. (Cevizci, 2016)

Sophistic philosophers, who have skepticism and empiricism in common, have also limited themselves to sensory knowledge. According to Sophists: “All our concepts and all our judgements are based on experience in the final analysis. There is a sensory experience at the source of knowledge.” (Cevizci, 2016)

Plato describes two worlds that are heard and thought. The world heard is the world perceived and seen by the senses. The world of the senses is the world of “temporary” and “relative truth,” where there are constant disappearances and extinctions. The other is the world of ideas, which is the world of truth. This world, which cannot be perceived by sense organs and is the main subject of knowledge, can only be reached through the mind. The basis of true knowledge is not found in the heard world but in the world of ideas. These domains of existence, which Plato divided into two, have two different types or styles of cognition. The first of these is the “episteme,” in the sense of rational philosophical knowledge about ideas, which are eternal, necessary, and intelligently knowable beings. The other is the “ninety” in the sense of belief or belief in the phenomena of the world of appearances that are realized and grasped through the senses. For the world of sense, there can be nothing

[14] Anaximander developed a theory of evolution that supported his observations with reasoning and arguments. He said, "Life began in the seas and the water, and all living beings, including humans, first lived in the seas and came to land later."

more than opinion or belief. Therefore, there is a movement from “faith to knowledge” from “ninety to episteme.” (Cevizci, 2016)

In Descartes' philosophy, too, the “ideas coming from the outside through the senses” are always blurred. Because the information coming through the senses is unreliable, it carries ambiguity. Descartes rejects aesthetic perception by claiming that “sensory perception, which cannot be elevated to a general level of discipline, has non-methodical objective value judgments, excluding its existence.” Cartesian philosophy, which is based on the idea of “clear and explicit ideas,” sees “sensuality” as a problem. “Sensuality” exists with its own property that cannot be reduced to conceptual generalization and is not based on open ideas. (Sınmaz, 2009) (P:14/7)

Gottfried Wilhelm LEIBNIZ (b.1646- d.1716), in his article titled “Information on Truth and Ideas,” says that “sensory information is open to error.” Because according to Descartes' discourse, “these are propositions, depending on sensory perception, which are generally obvious but whose specificity cannot be easily provided.”[15] (Çelik, 2011)

If an object cannot be grasped in a presentation in such a way that it is recognized by the senses (for example, the stars we see at night cannot be seen during the day), this perception is blurred. On the other hand, if something is perceived so distinctly that it can be recognized again through the senses, this perception is obvious. Open perception only performs the recognition of the object. However, although we cannot fully explain it, we realize that the object we are aware of is much more complex. The ground for perception beyond the visible object is much richer and more versatile, even a ball of emotion. This is the ground where likes or dislikes are formed. Leibniz places art and beauty in this field of perception. Therefore, aesthetic perceptions are condemned to remain unverified expressions of emotional response. This liking or disliking, which we cannot fully explain or name,

[15] Descartes uses the terms clear and distinct together to mean "obvious." In his work titled "Principes de la Philosophie," he states what he understands by these terms as follows: "*By explicit knowledge, I understand knowledge that is visible and evident to the attentive mind." I understand information that is separated from specific information from other information. So much so that in this knowledge, there is nothing but the obvious." (Principle 45) "Only what we perceive clearly and distinctly can we make a judgment without making mistakes." (Principle 43) "We can only make wrong judgments about things we do not know clearly. If we have made the right judgment, it is a coincidence, and we cannot know for sure that we have not been deceived. We are often deceived because we think we know many things." (Principle 44) "Knowledge can be clear without being clear, but it cannot be clear without being clear."*

Leibniz expresses in French by the term “Je ne sais quoi” (I do not know what it is). (Gaiger, Harrison, Wood, 2000)

Leibniz defines “pleasure” as a sense of perfection or perfection in ourselves or something else. We cannot always observe where the perfection of things pleasing is or what kind of perfection they serve within us, but we perceive perfection with our emotions, even if we cannot grasp it with our consciousness. “There is something about this that pleases me, but I do not know what it is,” we call the phrase “sympathy.” (Gaiger, Harrison, Wood, 2000)

Unlike understanding, pleasure consists of complex perceptions for which one cannot give sufficient reason oneself. It is like an instinct. Pleasures are shaped by nature and habits. (Gaiger, Harrison, Wood, 2000)

Knowledge is clear when it makes it possible to recognize what is represented. Clear information is complex or different. It is confusing to count the signs that will distinguish one object from another, even if the objects have components that their concepts can be analyzed. We distinguish objects not by signs but by the evidence we perceive through our senses. Just as we cannot explain to a blind man what red looks like, we cannot explain a quality like that to others without bringing them before it and making them smell, taste, or see, or at least remind them of things (a similar perception they had in the past). Similarly, we see that painters or other artists judge correctly what is done well or badly, but they cannot give a reason for their judgment. They explain what does not please them as “something exists, but I do not know what it is.” (Gaiger, Harrison, Wood, 2000)

For Leibniz, “sense perception is both fuzzy and non-specific. “For Christian WOLFF (1679-1754), to whom Baumgarten was a student, the sense is also a fuzzy perception and belongs to the lower faculties of knowledge. Both thinkers tried to ground rationality in the “intellectual” sense and did not say anything about the “field of the senses.” Baumgarten's aim in addressing the “aesthetic field” from a “logical point of view” is to fill this gap left by Leibniz and Wolff's rationality. Baumgarten tries to remedy this deficiency by “associating the intellectual with the sensory in terms of rationality.” Baumgarten criticizes the

rationalist tradition that “sensory knowledge is either equated with something like instinct or seen as a subtype of knowledge.” (Taşdelen, 2012)

Baumgarten, in his doctoral work “Meditationes Philosophicae de Nonullis ad Poema Pertinentibus (Philosophical Thoughts on the Necessities of Poetry)” in 1735, made the following observation: *“Greek philosophers and church priests have always made a careful distinction between the sensed (aistheia) and the thought (noeta). It is clear that they did not equate the known things with the senses. Therefore, what is known is known by the higher faculties as the object of logic; what is sensed is known by the lower faculties as the object of sensory science or aesthetics.”* According to Baumgarten, “the subject of comprehension is to determine the nature of knowledge.” Conceptually intuited, “known things” are objects of logic. Sensory experienced, “perceived things” are objects of sensory science, which is the science of “Aesthetics.” (Sinmaz, 2009).

According to Baumgarten, “some of our perceptions are clear, while others are blurry. The ability to know also varies according to the knowledge of the clear or fuzzy one. While the superior ability related to only reason or reasoning provides clear and explicit information, the lower ability to know or down knowing related to the sensory field gives the ambiguous, non-obvious perception ability. So, aesthetics is the science of the vague and fuzzy.” (Taşdelen, 2012)

The task of aesthetic knowing is “to help transform ambiguous sensory diversity into the clear perceptual image, to help the faculties of logical cognition.” Sensory cognition should not be considered incomplete or erroneous. Sensory cognition should not be seen as a deficiency but as an independent and autonomous knowing achievement of the soul. (Taşdelen, 2012)

Subcognition, or down cognition, is not far from rationality and direct. Although subcognition is not rational, its ability to cognize brings it closer to rationality. Thus, Baumgarten speaks of “aesthetic truth” along with metaphysical truth and logical truth. The object of aesthetic accuracy is not precise, and its accuracy cannot be fully grasped. In terms of certainty, human beings always glorify logical truth, but the price paid for it is to sacrifice rich sensory content. (Hammermeister, 2002)

In his work, Baumgarten defines beauty as perfection or competence perceived by the senses. Instead of turning to the divine, which man cannot reach, he should turn to reveal the perceivable. Baumgarten said that beauty is not perceived with a pure reason but with emotions.

According to Baumgarten, “the work of art represents the purposeful unity and beauty of the world because we learn from it that the world is beautifully created and in harmony.” Aesthetic sensation, which Baumgarten defines as the sensory mode of cognition, is a part of human nature and a feature that distinguishes man from animals. (Taşdelen, 2012)

Kant was again the great thinker who saw sensuality as the source of essential knowledge and restored its reputation to sensuality. Previously, empiricists, led by thinkers such as John Locke, David Hume, Thomas Hobbes and George Berkeley, also saw sensuality as a means of acquiring knowledge. According to empiricists, “there is no innate knowledge in the human mind, the human mind is like an empty plate (tabula rasa).” But Kant, who saw our organs of mind and sense as parts of an inseparable whole in the way of knowledge, showed that there could be an apriorism principle that remained unchanged in sensuality. Empiricism suggests that “knowledge can be gained through sensations and through experience.” However, according to Kant’s apriori view, the principles that establish experience cannot come from experience itself. The principles that establish experience must take precedence over all experience.

The “world of the senses” is the world of appearance that appears to us, that is, takes on forms specific to us, forms of our knowledge “time and space”. In the comprehension through each sense, there are two forms of the executive, the forms of perception: “Time and space.” As forms of knowledge based on perception, time and space find their basis in man, in man’s ability to know. Kant calls time and space “the laws found in human thought” (leges menti insitae); “time and space” are born as if by our thought. (Heimsoeth, 1986)

Kant rejects Leibniz and Wolff’s view that “the knowledge of the senses is fuzzy, and the explicit knowledge will only be knowledge based on concepts.” As a matter of fact, “the information that geometry gives us as a knowledge of space,

which is a pure form of our perception, is really clear and distinct. In fact, perceptibility in geometry is the basis of a precise and efficient way of seeing this information." (Heimsoeth, 1986)

According to Kant, the human mind is actually one, but it has two separate fields of operation, theoretical and practical, and separate laws. Kant separated the definition of the mind according to the subject and object he dealt with in this way. If the object is the subject of natural sciences, pure (theoretical) mind is mentioned. But when it comes to freedom or action, it is the practical mind that is at stake.

In the introduction to Kant's "Critique of Pure Reason", written in 1781, which is the first of his three criticisms, he distinguishes between "pure" knowledge and "empirical" (sensory) knowledge. These are, in Kant's own terms, "a priori" knowledge and "a posteriori" knowledge. A priori means independent of experience, not based on experiment. The opposite of a priori, a posteriori, means that it is given or can be given in experience. (Deleuze, 2000)

Kant calls this analysis, which investigates the forms of knowledge in the human mind itself, "Transcendental philosophy". Kant defines this concept as follows: "I understand knowledge that deals with transcendental knowledge, not only with objects, but also with the types of knowledge obtained from objects, exploring the apriori side of knowledge." (Heimsoeth, 1986)

In the introduction to The Critique of Pure Reason, Kant places another critical thought: Kant classifies judgement into two; analytical and synthetic. Analytical judgments are the explanations of the concept of the subject with the explanation of predicate. The principle of contradiction is the most fundamental principle of analytical judgments. In contrast, synthetic judgments, like analytical judgments, are not just explanatory judgments, but judgments that expand and multiply our knowledge. (Heimsoeth, 1986)

Analytical judgment is a judgment that declares a predicate that is already included in the subject. In other words, when one of the concepts includes the other, there is an analytical relationship between these two concepts. The proposition "A is A" is an example of analytical judgment. "Things hold their place in space." His proposition is also an analytical judgment. Because the concept of "body" cannot be

thought of without including the concept of space. “All phenomena appear in space or in space.” The premise is a synthetic judgment. Because although the concept of space containment is within the concept of body, the concept of space containment is not within the concept of phenomenon. (Deleuze, 2000)

The experience involves synthetic judgments. When it is said, “The rose is red,” there is an experience of encounter before it. Red is not included in the concept of rose. Like roses that are not red, red has identified different objects. (Deleuze, 2000)

All analytical judgments are apiriori. Being able to say that something is what it is independent of experience. Apriori is a judgment, “A is A.” You do not need experience to say it. Synthetic judgment, on the other hand, is a combination between two concepts that are not of the same type by nature. (Deleuze, 2000)

It is clear that all judgments from experience are synthetic judgments. In these judgments, concepts are connected to each other based on sensory data. All analytical judgments are analyses made according to the principles of logic alone. (Heimsoeth, 1986)

The particular problem of transcendental philosophy concerns synthetic judgments. All judgments of metaphysics must be a priori synthetic judgments if they are to realize the argument of being a powerful knowledge. (Heimsoeth, 1986)

Kant asks the most important question of Transcendental philosophy: “Is it possible for synthetic judgments to be a priori? Are synthetic a priori judgments possible?” At this point, it should be noted by opening a parenthesis; the answer to this question will also form the basis for the epistemology of evolutionary aesthetics.

How is it that our mind, before all experience, has an a priori definite knowledge of the structure of nature in conducting further experiments?

The title of the first part of “The Critique of Pure Reason “is “Transcendental Aesthetics.” In this section, Kant used the word “aesthetics” (Aesthesis) to mean “grasping with perception, senses” in Greek. In this section, Kant investigated the apriori aspect of Aesthesis and the forms of perception based

on the senses. He concluded that time and space are general and necessary forms of knowledge based on all kinds of perceptions and senses. In other words, time and space are apriori forms of aesthetics. (Heimsoeth, 1986)

In all knowledge, from the simplest to the most abstract, there are two distinct aspects: “Perception” and “Concept.” On the one hand, “the side given to the senses, which we concretely grasp,” and on the other hand, “the side of the ability to understand that connects with thought.” Kant put it this way: “Concepts without perception are empty; perceptions without concept are blind.” (Heimsoeth, 1986)

In order to understand the problem of apriori synthetic knowledge in Kantian aesthetics and the solid ground that “apriori synthetic knowledge” creates for evolutionary aesthetic discussions, it would be correct to mention Kant's concepts of “beautiful,” “supreme” and “genius.”

The effects of nature and works of art on us cannot be simply expressed in pleasant or unpleasant words, as in the tasting of a fruit or a meal. A general validity is clearly sought in the judgments to be reached in the aesthetic field, and there should be a priori principles in these judgments. (Heimsoeth, 1986)

The first two sections of Kant’s third critique, “Critique of the Power of Judgment,” in which the power of aesthetic judgment is examined, are called “Critique of the Power of Aesthetic Judgment,” and the experiences that announce beauty and greatness are criticized aesthetically. Kant combines this problem area with the problem of living nature that has plagued him for years and presents the problem of living nature as follows: What are the basic principles of organisms and the information about them? What could it be? (Heimsoeth, 1986)

According to Kant, with the principles of the mechanical order of cosmology and the corresponding ability to understand them, their metaphysical foundations are not enough to understand the world of living beings. While defining the living being, Kant puts forward the concept of purpose: The meaning of the concept of purpose is that the organs are in relation to each other in terms of their functions within the whole of the living being; there is a solidarity between them. The concept of purpose in the field of living beings prepares us to understand this work of nature, the functions of its parts, and the confusion and unity of these

functions. The judgment here is the judgment of the reflective judiciary. (Heimsoeth, 1986)

Kant's third critique expresses an important distinction: the distinction between decisive and reflective judicial power. The decisive judicial power discussed in the first criterion is about bringing the particular under the universal. In other words, it means putting the private under the previously known general. However, the third criticism, the Critique of the Judicial Power, is to find a suitable general for the particular given judiciary power. While the judicial power that puts the private under the known general is decisive, this judicial power is reflective if it is desired to find a general that is suitable for the known particular. The reflective judiciary is aimed at finding the universal when a particular is given. (Boyacı, 2005.

Reflective judgment carries apriori principles that allow us to find universal concepts that have not been given. Judicial power thinks about the variety of representations to find the universal. This thinking takes place according to the principle of the purposefulness of nature. This principle, which states that nature has a purpose, is the reflective principle of judicial power. (Sakar, 2021) In his third critique, Kant says that reflective judicial power makes particulars understandable by discovering the rules and laws to which particulars are subject and that the judicial power has a subjective apriori principle in this respect.

Kant says that the purposefulness of nature requires the adaptation of nature to our abilities of knowledge as apriori. Nature customizes its laws in accordance with finding universals for particulars. According to Kant, we can bring the principle of art, which is a subjective principle, to the foundation of nature through representation by casualizing it according to ideas. Nature customizes its laws in accordance with finding universals for particulars. Nature’s customization of itself according to a principle makes it look like art. Nature has a purpose to be beautiful just like the work of art. Nature can be likened to art in that it privatizes itself and does so for a purpose in itself. (Sakar, 2021)

In Kant's philosophy, pleasant, beautiful and good are different concepts from each other. It is grasped with good mind. Once it is grasped with the mind, it is judged by the purpose by taking in the object's own knowledge. Good is fit for

purpose in the moral law. It serves a purpose outside of itself. It depends on a good grip and is well known that it should be in determining. But beauty does not serve any external purpose except its own. (Boyacı, 2005.

Good judgment begins with pleasure. In the first formation of beauty, the subject's sense of pleasure or appreciation takes place. Enjoyment is a subjective state, not expecting any involvement from others. However, when the subject calls the object beautiful, he expects approval from other subjects. For this reason, the beautiful judgment emerges in the subject's own emotions, demanding a general feeling. In other words, the basis of this judgment, which is generally considered, is subjective.

According to Kant, beauty is based on the feeling of liking and disliking. The feeling of liking and disliking also depends on the subject. The feeling of liking and disliking is the basis of her beautiful judgment. The beauty depends on the way the subject is affected by the object. The feeling of liking is all about the subject himself, and the subject does not expect another to find the same object pleasant. However, the subject who calls an object beautiful expects everyone to find that abjectness; beautiful.

Kant puts forward a concept based on the sense, which is effective only in the aesthetic field, nabs; and applies to all people: “Common sense (senses communis)” &nabs; Kant explains the common sense in his Critique of the Power of Judgment as follows: “The thought of a general sense must be understood from the name of the common sense. In order to think with the common sense of mankind, the idea of a critical faculty that takes into account the design style of everyone must be understood. “

Kant described the sublime by comparing it with the beautiful in terms of its similarities and differences. According to Kant, “the beautiful is the reflection of the form of the object in the imagination; the sublime is the confrontation of the imagination with its own limit, its horror.” While the beautiful manifests itself in direct perception, it manifests itself after sublime perception.

What surrounds us and shakes us in the majesty of the majestic mountains we gaze at or in the majesty of the waves of the vast seas? What we are given here is

beyond our ability to understand. In fact, we should have felt a sense of danger and insecurity in the face of these appearances. We feel as if we have risen. In his third critique, Kant says: “Here, as in beauty, it is not only form; strangely, it is an infinite and unknown thing that has no form, throws aside all worries and feelings of danger, and moves and makes us wish, as if overturning our inner being. In this experience of the glory of incomprehensibility, there is no definite thought, no law. Here, the inner being of the human being seems to move, as if it has begun to merge. A real contrast arises in this fusion: this splendor of nature, which has no value for man’s existence connected with the senses seeking confidence and comfort, has a high purpose in terms of harmony and spiritual abilities in man’s inner being: purpose without a specific purpose.”

Kant considered the word genius as the source of the original thoughts that were given to man from birth, derived from the guiding and protective spirit “genius”. He sees genius only as a gift for art. For Kant, this ability is the innate productive ability of the artist who belongs to nature.

In Kant’s “Critique of the Power of Judgment,” his “attempt to unite two very distinct domains, aesthetics and the world of living beings,” has been and continues to be very influential on the ages after him.

Dabney Townsend said, “To talk about beauty is to talk about ourselves.” “Instead of asking what makes a thing beautiful, it might be better to ask why we like it.” We see that Kant’s philosophy of beauty was formed in this context. However, when beauty is considered from an evolutionary perspective in the context of art, it is incomplete to talk only about the aesthetic experience of the subject. The artist wants to express his/her own feelings and thoughts in his/her work, and he/she carries the concern of the aesthetic values of his/her work, which reflects his/her feelings and thoughts. In other words, there is the beautiful object, the artist who created it, and the subject who feels aesthetic pleasure from the object. In fact, the beauty of the object does not come from the object itself, but from the artist’s act of making the object beautiful. This is also related to the artist’s desire to create an emotion in the audience.

CHAPTER IV

11. CONCLUSION AND DISCUSSION

The concept of “liking” includes choosing, preferring, orienting, inclining. “Choosing” makes diversity necessary. We like and choose in the diversity that exists. The evolutionary origins of artistic actions lie in their preferences and behaviors of choosing- choosing, liking - disliking, orienting-avoiding.

With these contextual approaches, the dissertation study was commenced by examining the mechanisms of evolution. Amitosis cleavage and mitosis cleavage in sexual reproductive and chromosomal crossing mechanisms, which are among the mechanisms that create diversity in evolution, are not mechanisms that contribute to diversity. Ancestor cells transfer their genes to the new generation without undergoing any changes. Chromosomal crossover, which occurs between chromosomes during the formation of reproductive cells (such as sperm and eggs) produced by meiosis before mating, contributes to genetic diversity and diversity continues to increase over generations. The mixture here is not conscious, there are only “physical” and “chemical” interactions. Almost all of the diversity in the world is due to the mechanism of sexual reproduction and crossing over. But this mechanism serves to confuse the existing diversity. The main mechanism that adds diversity to the population is mutations. Transposons, plasmids and viruses and the horizontal gene transfer performed by them are also mechanisms that affect diversity.

There is an extensive range of biodiversity in life, the basis of which is created by variations that arise as a result of the diversity mechanisms of evolution. Variations in this biodiversity evolve by being selected according to the relationship between environment and organism through the selection mechanisms of evolution. This selection and selection continue on the basis of both the struggle for survival in natural selection and the struggle for reproductive advantage in sexual selectivity. As the individual likes what is beneficial for him/her and turns towards him/her, he/she dislikes what poses a danger to himself/herself and threatens his/her existence and walks away. Or he/she tries to look nice to the individual he/she wants to like, choose and prefer; he/she wants to get away from the individual or thing he/she does not want him/her to notice and choose, and to look unpleasant to him/her. As in other

living beings, human appreciation judgments have basically developed in line with the information given to us by sexual and natural selection mechanisms over millions of years.

Natural selection is based on the principle that organisms as a whole, with their physical and genetic structure, cannot be considered independent of their environment. Humans continue their evolution as a result of interaction with their environment as a part of nature. Our sense organs have developed in such a way that we can survive as a result of our interaction with our environment. Again, based on the definition of "aesthetics," since our sense organs are formed as a result of our millions of years of evolution, our aesthetic judgments that we perceive with our sense organs have developed in parallel with this process. We can watch and understand animals in their natural environment, and their adaptation to their environment through the selection mechanisms of evolution while observing their struggles for life. On the other hand, the fact that the selection mechanisms of evolution cannot be clearly observed in the daily life of modern man, who dominates nature with his advanced technology and culture and no longer maintains his brutal struggle with nature like other animals, should not give the impression that we are born with a number of abilities independent of nature.

On the other hand, how did artistic activities in humans develop so clearly in our evolutionary process, despite the fact that their very primitive nuclei are seen in other animals? The answer to this question is sought primarily in the evolutionary process of the brain. When the studies were examined, it was not possible to reach a conclusion that distinguishes the human brain from other living beings and makes it special. When the evolution of hominins over 2 million years is examined, it is seen that the development of the brain and the development of physical abilities are parallel to each other. This is the result of interaction with the environment, as in other living beings.

If living beings use their creative instincts to stand out in both the sexual selectivity mechanism and the natural selection mechanism of evolution, to attract attention, to be noticed, to exhibit their individual abilities and superiorities, and to be liked and selected at the end of this process, artistic production is seen as a method that meets this need in humans. The individual, who carries the insight of

artistic creation, wants to stand out with his artistic production, to be noticed, to attract attention. It does not have to be outward appearance like other creatures. Man, whose intellectual level is much more developed than other living beings, expresses his mental development to the forefront with art.

İnci EVINER, one of the essential representatives of modern Turkish art, defines art as follows:

" In other words, do not think of art as objects that only give pleasure, decorate the walls of the house, and are in museums. By borrowing the methods of art, you can bring your own self, your own awareness and how your work works politically within the systems to a different dimension, and you can borrow more sensory and experimental approaches and methods from art." (Eviner İ, 2016)

Woody ALLEN has a similar anecdote in the first chapter of his autobiographical book "Apropos of Nothing": Woody ALLEN says that he is not an intellectual who does not like to read and write. He is only interested in sports. However, this prevents him from dating women because he has nothing to talk about except sports. That is why he started reading books to communicate with women.

The evolutionary processes of human beings have also shown that the innate instinct of creation and aesthetic judgments of living beings, in parallel with the evolution of human culture, have reached the high level of intellectual activity that we call "art" today.

When and how art began is a very controversial topic. It is commonly believed that art began with cave paintings 40,000 years ago. However, a very recent study has revealed that the dot symbols found in animal figures in cave paintings serve as a lunar calendar to determine the fertility or reproductive periods of animals. (https://www.bbc.com/news/uk-england-64161861); This study shows that the beginning of art to cave paintings 40,000 years ago will lead to new discussions from the perspective of today's definition of "art."

Many studies on animals other than humans have shown that other animals have the physical or intellectual abilities necessary for the activity of producing art, in accordance with their own capacities.

In recent years, a great difference in understanding between animal and human has been observed. With the spread of social media, we often witness animal behaviors that we cannot observe and experience in our own lives. Advances in imaging technologies have allowed us to observe animals more easily in their natural habitat. Thanks to such developments, people's perspective on nature has changed, anthropocentric understanding has begun to weaken, a more integrated, more identificationist approach to nature has emerged.

The activity of art, the greatest feature that distinguishes man from animals, has been considered a sublime talent bestowed on man. For these reasons, art has been considered the biggest supporter of an anthropocentric understanding of the world. Pierre-Joseph Proudhon (1809-1865), the first thinker to describe himself as an anarchist, says in his book "The Principle of Art":

"Apart from his sexual attraction and material needs, the first person who knows how to notice an interesting, unique, wonderful or terrible object that can be a source of pleasure in nature is the artist. The first artist was able to create a contact, a jewel, a memory from this object and presented it as a sign of his love, respect or friendship for the person he valued.We can say that a little girl who made a crown from flowers, a woman who made a necklace from seashells, pebbles, pearls, or a warrior who wore a bear or lion's hide to make himself more terrible were artists. This aesthetic ability is unique to our species. The animal lacks a sense of self; like the philosopher Horace, it admires nothing. It makes no distinction between right and wrong, or between beautiful and ugly. It lacks pure love and delicacy. Although the work does not cause vagueness and self-interest, it is insensitive to all these beauties and harmony of nature. The animal accepts itself as it is, does not long for victory, does not think of boasting about its appearance or decorating its house with flowers. He/she continues his/her life without fuss, distress and away from meaningless needs. However, he also carries the memories of his loved ones, hated ones and the events that frightened him; he dies of sadness when he is deprived of his offspring or his wife. However, the dead are not left behind by an heirloom or turned into a kind of ash. The animal is free and gets its needs from nature. You can never see him drying out the skin of the animal he hunts in the Sun, pouring his food into salt or spices, or sorting out what he collects according to his species. "

This theory, in which this anthropocentric aesthetic understanding, which was dominant until recently, has now been demolished, has also been established as a result of this dissertation study.

It is established that our creative instinct and aesthetic judgments, together with our evolutionary process, reveal our artistic activities today. Aesthetics is a priori synthetic knowledge. Aesthetic judgments are synthetic because they are based on experience. If what shapes the experience itself cannot precede the experience, then what shapes the experience must be there. Aesthetic information is, therefore in a priori form. When an object is looked at and an aesthetic judgment is made, the decision is made thanks to the a priori information in the subject before this experience. The fact that masterpieces are also liked by people from different cultures shows us the universality of synthetic a priori knowledge. Kant states that the information that starts with the experiment warns us of the information we have a priori. The works of art also create an aesthetic feeling by touching these ancient evolutionary emotions, which are already a priori in the receiver, and an aesthetic judgment is formed against the work of art.

The judgments of appreciation do not belong to the object itself, but relates to the object experience. There are formal qualities that permeate perception and judgment in humans. What is discussed in Kant's aesthetics is the experience that beauty creates in the subject. It does not matter whether the object is really beautiful or not. Even if objects in nature are beautiful, they can have very different emotions. Just like the creepy, scary, insecure evolutionary emotions when we look at an enchanting sea of enchanting beauty.

Kant's views on taste and judgment are not considered sufficient. Kant's Critique of the Power of Judgment is described as the weakest of his three criticisms. This is due to the idea that beauty and aesthetic judgments are subjective. However, in aesthetic judgments, there is a “je ne ce quoi,” an “a priori.”We want to share with others what we find beautiful and what we like. We like to be with people who like the same things as us. Are not the various social clubs created to meet this desire? Does it not define “sensus communis” that others read the book we like; that we watch the movies we like with others, that we have long conversations about them; that the feelings that the book or the movie makes us feel are felt by others? Does not

the fact that the artist wants to present his/her works to the audience, that he/she establishes a communication bridge with the audience through the artwork he/she conveys his/her consciousness, and that the artworks themselves make the presence of “sensus communis” felt?

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