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CHANGING PERCEPTIONS OF SCULPTURAL POLYCHROMY IN EUROPE:
FROM ANCIENT GREECE TO THE 21ST CENTURY

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CHANGING PERCEPTIONS OF SCULPTURAL POLYCHROMY IN EUROPE: FROM ANCIENT GREECE TO THE 21ST CENTURY

A Master's Thesis

by
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Ankara
June 2021

To my lovely husband Irmak, my cat Tilki

&

Meral, Edib & Gönenç Kökdemir



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ABSTRACT

CHANGING PERCEPTIONS OF SCULPTURAL POLYCHROMY IN EUROPE: FROM ANCIENT GREECE TO THE 21ST CENTURY

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This thesis examines the perception of polychromy in Greek sculptures over different periods by using archaeological and art historical data. To examine the usage of polychromy in Antiquity, ancient sources and technological methods have been assessed. The aim of this research is to understand the perception of color in the Greek period and to pinpoint the time of when this perception changed looking at a timespan from the Renaissance to the present. This studied identified possible motivations for the use of color in Greek sculptures: visibility, realism, meaning, completion, and tradition. It also revealed possible reasons for the rejection of color in the Renaissance and subsequent periods were also understood: contempt towards the Middle Ages, admiration for Antiquity, and establishment of a new tradition.

Keywords: Polychromy, Greek Sculptures, Color Studies, Perception of Color, Color Usage

ÖZET

AVRUPA'DA HEYKEL POLİKROMİSİNİN DEĞİŞEN ALGILARI:

ANTİK YUNAN'DAN 21. YÜZYILA

Uçar Sarıyıldız, Dilara

Yüksek Lisans, Arkeoloji Bölümü

Tez Yöneticisi: Prof. Dr. Dominique Kassab Tezgör

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Bu tez, arkeolojik ve sanat tarihi verilerini kullanarak Yunan heykellerindeki çok renklilik algısını farklı dönemlere göre incelemektedir. Çok renkliliğin Antik Çağ'daki kullanımını incelemek için antik kaynaklar ve teknolojik yöntemler değerlendirilmiştir. Bu araştırmanın amacı, Yunan dönemindeki renk algısını anlamak ve bu algının ne zaman değiştiğini Rönesans'tan günümüze uzanan bir zaman dilimine bakarak tespit etmektir. Ayrıca bu tezde, Yunan heykellerinde renk kullanımı için olası motivasyonlar belirlenmiştir: görünürlük, gerçekçilik, anlam, tamamlama ve gelenek. Aynı zamanda Rönesans'ta rengin reddedilmesinin olası nedenleri de bulundu: Orta Çağ'a yönelik küçümseme, Antikite hayranlığı ve yeni bir geleneğin kurulması.

Anahtar Kelimeler: Polikromi, Yunan Heykelleri, Renk Çalışmaları, Renk Algısı, Renk Kullanımı

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CHAPTER 1

INTRODUCTION

1.1. Background

Sculptures were an inseparable and fundamental part of Greek culture. They had many significant functions in society: religious, funerary (such as as grave marks in cemeteries), prestige indicators (for example as portraits of individuals) ... Thus, they appear in nearly every context of ancient Greek life. Although they had the same function in the Roman Period, they were also used in private domains as symbols of prestige, such as in the gardens of villas. Throughout all these periods, color was a continuous quality of these sculptures. We know today that most, if not all, ancient Greek and Roman sculptures were painted at the time of their creation. These colors were an integral part of their artistic and aesthetic appearance. Thus, evaluating the way colors are used is an essential part of seeing the way that Greeks perceived art.

1.2. Objectives of the Research

This thesis assesses the perceptions of polychromy on Greek sculpture throughout time. Accurate chronological information is important, as this affects scholars in exploring the perceptions of polychromy on past peoples and its impact on following generations. This study will help contemporary eyes to see and understand the sculptures as they were and the way that they would have been perceived at the time they were made. It also may remind us of the reality

that Greek sculptures were painted and explain why our perception of polychromy is still biased.

1.3. Methodology

This thesis has taken a multidisciplinary approach. Aside from archaeology and art history, it also uses classical philology and ancient history as primary texts are important and relevant for our understanding of the ancient Greek perception of colors. In addition, this thesis also reviews new techniques of pigment analysis for pigment and reconstruction of the polychromy color-coding. Furthermore, this study makes use of the observation of artifacts, a literature review, and a small quantitative survey for the reasons section.

To enrich my knowledge on the concept of polychromy and to understand polychromy throughout time, I read many articles and books in Bilkent University and in École Pratique des Hautes Études during my Erasmus+ period. I have also consulted the Louvre Museum's archives of the department of Greek and Roman antiquities. I had meetings with Prof. François Queyrel, my Erasmus supervisor, and Prof. Philippe Jockey, who researched polychromy in Ancient Classical sculptures.

1.4. Outline of the Thesis

This thesis is divided into eight chapters. The first chapter is an introduction explaining the background, the objectives of the thesis, and the methods.

In the second chapter, I analyze the concept of *polychromy*, its definition, and the tools for investigating it. For this thesis, it is crucial to understand the meaning of polychromy to explore its purposes in the Greek Period and its perception through time.

The third chapter is dedicated to the description of polychromy from the Daedalic Period to the Classical Period. It starts with the Daedalic style (c. 650-600) as the first suitable example for the use of polychromy is dated to this period: the Lady of Auxerre which has traces of painting that permit reconstructing its polychromy. For the Archaic Period, I will study the Kouros of Tenea and two Korai of which the polychromy has been reconstructed in detail. It is fundamental to study these artifacts because they are at the beginning of the tradition. I continue with the Classical and Hellenistic Periods. These periods are very significant because the Classical Period represents the heyday of sculpture in Greece, and they have shaped the art of the subsequent periods leading up to modern times. For the analysis of the artifacts, I decided to study only original Greek sculptures, not any copies. Though there are many Roman copies of Greek sculptures, I believe that they reflect the Roman perception of sculpting and painting, which is why they have not been included into this study. Besides the polychromy present on all the sculptures in the Classical and Hellenistic periods, a new style also appears in the latter: monochromy.

In the fourth chapter, the Roman sculptures also show both possibilities: polychromy and monochromy. We shall question if this change can be considered as the first *breaking point* of the polychromy perception or not. However, the taste for monochromy seems to have faded with the Byzantine and Medieval Periods when polychromy becomes dominant again.

The fifth chapter covers the sculptures in Europe from the Renaissance to the beginning of the 20th century, and with the Renaissance period we witness our big *breaking point*: the perception has definitively changed with Michelangelo (1475-1564) who encouraged his fellow artists not to use polychromy on statuary in the areas where the Roman Catholic tradition was dominant. This new tradition was adopted in the Baroque period (17th-18th centuries) by the great sculptor Bernini (1598-1680), then again during the Neoclassical period

when it was the dominant art style in Europe in the late 18th and early 19th centuries and was adopted by Antonio Canova, among others. In the 19th century, it continued with Auguste Rodin, although the purpose of his art was different.

In chapter 6, I review the previous scholarship about polychromy in sculptures. I explore how the presence of polychromy in the 18th and 19th centuries was a topic of debate. Some scholars rejected it, such as Johann Joachim Winckelmann (1717-1768) and Adolf Furtwängler (1853-1907), some accepted and studied it, such as Louis Courajod (1841-1896) who emphasized the colors in his book *La polychromie dans la statuaire du Moyen Âge et de la Renaissance* (1888).

Around the first half of the 20th century, the claim by William St Clair in 1937-38 that the Parthenon friezes were washed to whiten them on arrival in England (St Clair, 2004: 11) shows that this period continued to appreciate white sculpture. However, changes in sculpture research began to be noted by Gisela M.A. Richter (1882-1972). In the second half of the 20th century, this approach was continued by others such as Jean Marcadé (1920-2012), Rhys Carpenter (1889-1980), Brunilde S. Ridgway (1929-), and R. R. R. Smith (1954-).

In the 21st century, we shall also see how the perception and the acceptance of the color in ancient sculpture has been progressive when paralleled with the development of technology. With the new methods of analysis discussed in the second chapter, experts have accepted that polychromy is an inseparable part of ancient Greek sculpture. As we will see in detail in this chapter, scholars such as François Queyrel and Vinzenz Brinkmann produced critical studies on the subject during this period. However, despite this research and the fact that the existence of polychromy is now confirmed, there is a contemporary resistance to the concept of colored sculptures. The possible reasons for this resistance are political and aesthetic, which will be demonstrated with the result of a small survey.

In chapter seven, I will aim to find out why colors are used and abandoned in order to understand change in perception. Finally, the eighth chapter will conclude this thesis by providing an overview of the previous chapters and commenting on the results of the study. Some final thoughts will be given about the future of studies of polychromy on ancient sculpture.



CHAPTER 2

DEFINITION, RESEARCH, AND PURPOSES OF SCULPTURAL POLYCHROMY IN ANCIENT GREECE

In this section, the definition of polychromy on sculpture, ancient primary sources, and modern research methods, which are the sources of our knowledge on this subject, will be evaluated.

Polychromy refers to the colors used in artworks. Its terminology comes from the Ancient Greek words πολύ (*poly*), meaning many, and χρώμα (*chrôma*), meaning colors (<https://www.etymonline.com>). Polychromy on a sculpture can be found in all periods and regions of the world. Other than painting marble, , color could also be represented with the use of different coloured marbles such as ivory or purple marble, for example, the 'Dancing lady' in Antalya Museum (Figure 1). It is a constant feature of Ancient Greek sculpture, which is the starting period of this thesis, and as previously mentioned was replaced by monochromy from the Renaissance onwards. Since then, it has continued to influence modern taste, and there is still a tendency today to reject the idea of colors on ancient Greek sculptures.

2.1. The Word *Polychromy*

The archaeologist and architectural theorist Antoine-Chrysostome Quatremère de Quincy (1755-1849) coined the term *polychromy* when discussing Greek and

Roman classical sculpture in his research, *Le Jupiter Olympien* (Combs, 2012: 21). This work is dedicated to the polychrome sculptures and the history of gold and ivory sculptures among the Greeks and the Romans. He wrote that "I shall examine [...] how widespread the use of paints and colors is. I hope to prove how mistaken we have been about classical art" (Quatremère de Quincy, 1815:30-1).

2.2. The Polychromy Evidence and Sources

Today, it is the ancient sources and modern techniques that enable us to observe the existence of polychromy in the sculptures of the past. In this section, I will introduce these resources and techniques.

2.2.1. Ancient Sources

To investigate polychromy, some ancient sources are available. While the sculptures themselves are our primary source, indirect resources such as ancient authors, epigraphy, or iconography, are also needed as it is not always possible to see pigments on the works that survive today. There will be examples for this section following section.

2.2.1.1. Artifacts

The primary source of information currently available comes from the artifacts themselves and there have been very rapid advancements in the past twenty years in this area. Increased awareness among archaeologists and museum curators makes it possible to protect newly discovered artifacts from excessive cleaning which can strip off color residue. Sometimes pigments may not survive, or their colors may have altered due to the erosion and damage of time. In these cases, due to the technology which will be discussed below, researchers can access information about these pigments.

Some of the sculptures discovered in the last two decades have well preserved polychromy and can be subjected to analysis. For example, this is the case of the head of an Amazon made of marble discovered in Herculaneum in 2006: the hair, eyes, and eyelashes were enriched with paint (Beale & Earle, 2010: 35) (Figure 2). Detailed examples of sculptures having preserved their colors will be discussed in the following sections according to the period from which they belong.

2.2.1.2. Ancient Authors

Although the term 'polychromy' did not exist before 1815, equivalent terms did exist in ancient Greek, like ποικίλος (multicolored) (Homer, Iliad, 5.735; Aeschylus, Agamemnon, 923) or γραπτός (painted) (Dionysius of Halicarnassus, De Compositione Verborum, 25). In Latin, *versicolor* (particolored) (Quintilian, Institutio Oratoria, Book 8, Par. 20). The lack of a single term for what we understand as polychromy makes it challenging to research this subject in ancient texts.

A few explicit mentions of painting on a sculpture can be found; however, some are occasionally done without any explanatory comments. For example, while mentioning the beauty of a painting, Pliny writes that when the sculptor Praxiteles was asked which were his favorite statues, he allegedly replied, "those painted by Nikias" (Pliny, H.N. XXX). Pliny also states that Jupiter's statue was "regularly painted with cinnabar" (Combs, 2012: 24). Furthermore, Helen of Troy is quoted as saying that "If only I could shed my beauty and assume an uglier aspect, the way you would wipe color off from a statue" (Euripides, Helen 260-3). This quote reveals the relationship between color and the importance of colors in the concept and perception of beauty.

Pigments are described in ancient texts; for example, the first ancient written description of producing Egyptian blue pigment for use in sculptures is in De

Architectura, by Vitruvius, dating back to 30-15 BC. Vitruvius described how Egyptian blue was produced by mixing sand, saltpetre, and copper (De Architectura, 7.11.1), on the other hand, Theophrastus (De Lapidibus, 51.6) recorded the use of red ochre by painters to simulate the color of the skin in the 3rd century BC.

These texts are significant in terms of confirming the presence of colours and also attesting to the visual perception of the period. For example, in the Homeric epics, the sea is not blue, “the open sea is like wine (οἶνοψ) or violet (ίοειδής); its waves by turns purple (πορφύρεος), black or dark (μέλας, κελαινός); the shore and the choppy stream of foam turn white and turn gray (πολιός)” (Grand-Clément, 2013: 143). In other words, the perception of the color of the sea is explained with other tones and colors rather than the blue that we use today.

Strangely, Pausanias, who traveled around Greece and Anatolia and recorded everything he saw, is rarely referred to. There is a significant reference to the use of cinnabar at Periegesis in Eastern Achaia. He reports the red coloration with cinnabar of a Dionysos statue in the sanctuary of Phelloe (VII.26.11). Pausanias adds that cinnabar was mined by the Iberians together with gold (VIII.39.6). He also often confines himself to pointing out the primary material: wood, stone, or other, and not the polychromy adorning it. For instance, in his *Description of Greece*, V.20.8, Pausanias wrote, "Here are a set statue of Philip and Alexander [...] of ivory and gold, as are the statues of Olympias and Eurydice (V.20.10)". These are chryselephantine statues, but there are some bases which have been found in the Philippeion of Olympia. According to Prof. François Queyrel (personal communication) these bases supported marble effigies. This could be attributed to the fact that his ambition is not to precisely describe the aesthetic aspect of the works and buildings he has in front of him, but rather to collect accounts of traditions across geographies. Also, as noted above, there was no need to describe something which looked so ordinary.

Interestingly, there is plenty of information in the ancient sources *not on the coloring phase* but on the technical phase γάνωσις (ganosis). This is obtained by applying punic wax melted over an intense fire mixed with a bit of oil to finish the sculpture (Vitruvius, De Architectura, 7.9.3–4). The other primary sources for this practice are Pliny (Natural History, XXXIII.40), Plutarch (Quaestiones Romanae, 287), and Theophrastus (De Lapidibus, 23). Pliny mentions the cinnabar pigment and its preservation by the ganosis and describes the process: "(for) A surface painted with cinnabar [...] let the surface dry and then surface treat it with Punic wax melted with oil and applied still hot with brushes [...], in the same way as you make marble shine (Natural History, XXXIII.40). The purpose of ganosis treatment was to delay the fading of colors and to make the colors more visible. This application was renewed periodically, to protect the color and also to make the surface of the marble, which is not painted, less white like those of columns.

2.2.1.3. Epigraphy

Many inscriptions in the Greek world were written to give information about construction and building accounts. Some of these texts specify the payment of salaries and the supplies necessary to construct or repair the temples' ornamentalions and statues. This epigraphic data is essential because it makes an understanding of the use of polychromy on buildings possible.

For instance, The Propylaea in the Acropolis is precisely dated to 437 BC by literary accounts (Dinsmoor, 1913: 371). There are records of orders and payment of marble and payments to certain artisans such as painters (Pike, 2009: 37). Also, in the building epigraphy of the Erechtheion in the Acropolis, *encaustic painters* are mentioned as having decorated a marble molding (Richter, 1944: 329).

Some texts, such as Plutarch's Life of Pericles (12.6), also mention that the materials used were stone, bronze, ivory, gold, ebony, and cypress-wood, and that there were carpenters, molders, stonecutters, *dyers*, workers in gold and ivory, *painters*, embroiderers, and embossers [...] working in the/at the Parthenon.

2.2.1.4. Iconography

There are also iconographic sources on the use of polychromy in ancient Greece, but no systematic study has been attempted to bring them together. Some images, painted or engraved, show the craftsman at work painting an object or a statue.

I would like to mention the Apulian column-krater, an essential piece of the 4th century BC iconographic repertoire (Marconi, 2011: 147). Artist representations are scarce; that is why this piece is significant. It displays a painter in the process of painting a Herakles statue (<https://www.metmuseum.org/art/collection/search/254649>). The painter holds a spatula and paint pot in his hand and paints the Nimesian lion's skin on Herakles' shoulder (Figure 3).

Another unique artifact, a gem mounted on a Roman-era ring dated to the 1st to 3rd century AD, depicts a sculptor working with a brush on the hair of a female portrait (<https://www.metmuseum.org/art/collection/search/244919>). He has a brush in one hand and probably a palette in the other one (Figure 4).

The variety of colors from such works cannot be seen only the gestures and the tools allow one to imagine the sculptures being painted. In this respect, wall paintings offer more information. For example, in the painting of *The Sacrifice of Iphigenia* found in Pompeii, the statue of Artemis on the left is entirely polychrome (Figure 5).

2.3. Modern Techniques of Analysis

Advances in technological tools and analysis studies have greatly improved our knowledge of colors in the ancient worlds for the last two decades.

2.3.1. Raking Light

Although it may seem difficult to imagine that after decades of wind, sun, and sand damage traces of polychromy on ancient statuary might be present, it can be observable due to a simple technique using *raking light*; which has been used to analyze art for a long time. A lamp is carefully placed so that the light path is almost parallel to the object's surface making all line traces visible (Brinkmann et al. 2008: 22) (Figure 6). It is difficult to see the primary colors with this method, but detailed patterns with fine cuts and incisions become indicating areas that were marked out for emphasis by coloring visible.

2.3.2. Ultraviolet Light

Ultraviolet (UV) light is used to discern patterns and colors. Researchers use UV lights to check ancient paintings and identify organic compounds (Brinkmann et al. 2008: 23). With UV light, tiny pigments remaining on the sculptures shine and reveal the pattern detail (Figure 7). It is impossible to detect them using just the naked eye because, even if there is enough pigment for the naked eye to distinguish the color, a few thousand years may have changed the colors that are reflected. Hence, it would be misleading to think that the color seen today would be the same as the hues that the statues were originally painted with. Thanks to analysis, the organic compounds and the color(s) used are identified.

2.3.3. Spectroscopy

X-ray spectroscopy may help researchers understand the composition of pigments and other components of a painting rendering it easier to understand how they looked originally. Spectroscopy is a form of examining pigments'

properties through absorbed and released particles, light, or sound (Casadio and Toniolo, 2001: 71) (Figure 8).

One of the crucial benefits of spectroscopy and microscopic analysis is detecting *repainting* meaning that the sculpture has been repainted at least once if not more than once. Spectroscopy and microscopic analysis can detect multi-layered pigment on the sculptures' surface (Bourgeois and Jeammet, 2014: 87). Repainting might be due to change in trends, repairing, or simply just to make them brighter or different. For example, as a result of Liverani's (2014, 10-11) research, repainting was found on the surface of Asklepios of Dresden, this example demonstrates stratigraphic sectioning of paint, with a layer of red paint covered with a thick white preparation, which was later covered with pink (Figure 9) (Bourgeois, 2014: 73).

2.3.4. Visible Induced Luminescence

The Visible Induced Luminescence (VIL) method is used to detect inorganic historical blue pigments such as Egyptian blue, Han blue, or Han purple. It requires taking a photograph of a reflected object from behind a visible-blocking filter, which enables the mapping of pigments (Verri, 2009: 220) (Figure 10).

2.3.5. Microscopy and Pigment Analysis

The microscope is very useful for analyzing remaining fine pigments (Figure 11). It can provide supportive results when combined with other techniques as it is performed by analyzing chemical and physical pigments with microscopy.

2.3.6. 3D Reconstructions

3D reconstructions of painted replicas via computers are among the most valuable developments that technology has brought to us in this field of study.

Using 3D reconstructions, the white aesthetic of sculptures that we are so used to disappears, and we are able to experience the reality that is polychromy (Figure 12). I think this method is one of the most critical factors for understanding and polychromy as it was used in Antiquity. However, as it will be mentioned in the following chapters, these reconstructions can be done in multiple way, for example, two possible and very different reconstructions of the paint scheme on the very famous Augustus Prima Porta statue have been presented (Figure 13) (Figure 14). In other words, the 3D reconstruction of how a statue looked when painted can have more than one possible appearance when the pigments have disappeared due to environmental issues.

3D reconstructions rely on subjectivity, especially when the surface is non-pigmented. Although it is a good method for getting used to see it such interpretations and subjectivity can compromise the accuracy of the results and impose arbitrary 3D images. There is also the problem of the possible alteration of the original colors even when traces of pigment remain. Therefore, these reconstructions need to be done very carefully.

To conclude, polychromy is a reality of antique sculptures. With the advances in technology and archaeology, we are beginning to understand this factor better. The detailed investigations we will see in the following chapters will demonstrate how the technology permits reconstructing polychromy on sculptures.

CHAPTER 3

POLYCHROMY IN GREEK WORLD

3.1. Daedalic Period

The earliest evidence of the Daedalic style in sculpture dates back to the 7th century BC, and the statues in this style can be counted as the first evidence of monumental sculpture during the ancient Greek period. The Daedalic style got its name from the legendary craftsman Daedalus. The concept of 'Daedalic' can refer to many things and can be applied to style or geography, but also to chronology (Aurigny, 2012: 3). It is possible to say that this period's sculptures are the ancestors of all Greek sculptures. Ancient Greek sculpture and art was inspired by Ancient Egypt (Herodotus, 2.143) which is demonstrated in the body shape, hairstyle, and frontal stance of Daedalic sculptures.

As the next sculptural phase in Greek art, the Archaic period, is seen as a continuation of the Daedalic Style, we can assume that the sculptures of young men and women were already dominant in the Daedalic Period (Dunham, 2005: 24). However, we do not have much information about these sculptures in the Daedalic period.

As an example, for the Daedalic, I would like to describe Lady of Auxerre that I saw and studied in the Louvre Museum (Figure 15). This statue is the oldest example of an ancient Greek monumental statue that has been analyzed and

studied. It was found in a storeroom in Auxerre, France, in 1907 and is dated to the 7th century (Gunther and Bagna-Dulyachinda, 2020: 161). It is approximately 65 cm tall and made of limestone. I think the most noticeable feature is its frontality. Her braided hair frames her elongated triangular face. She has almond-shaped eyes and a smile that would later be called the *Archaic smile* (Figure 16). Her feet are visible from under her dress.

The use of polychromy on this statue can be seen with the naked eye and that there are incisions on the front of the statue. These incisions were used as guidelines for the rich patterns on it. Red paint residues are still visible, especially on her dress's skirt. The incised lines on the statue's dress are engraved in the pattern of fish scales, on the chest, square strips on the mantle's edge, and intertwined squares on the skirt (Figure 17).

Unfortunately, the rich mixture of colors assumed to be used on this statue, remain unknown due to their disappearance over time. Thus, we are limited to assumptions for choice and intensity. In my opinion, we can rely on the study of Valentina Manzelli for the Lady of Auxerre, who has a convincing argument (Manzelli, 1994: 285). Manzelli's reconstruction was made in the 1990s on a plaster cast in Cambridge, which is still at the Museum of Classical Archaeology. According to the interpretation made by evaluating the pigment samples left in the hair and clothes, her hair eyebrows, and eyes are black, while her lips are red. Her dress is also red, and the fish scale patterns are blue. The shawl on her shoulder has red and blue patterns on the edges. The skirt part has red and blue geometric patterns. Generally, a kore has been thought that it can be a funerary marker (Aubuchon, 2013: 2). Considering the color red and its meaning representing the *soul* and *life* in ancient Greek writings (Gage, 1999: 26), this interpretation is quite convincing/strong. Her thick belt and bracelets are also yellow, and her skin is light-colored (Figure 18).

However, it is worth noting that this reconstruction demonstrates artistic liberties with certain colours and their placements. For example, there is no pinkish pigment on the skin or blue pigment on the clothing.

3.2. Archaic Period

After the 8th century BC, Greek colonies spread to the eastern shores of the Aegean Sea. Population growth, the adoption of the new alphabet, and the mixing of Greek mainland and the Ionian cultures of Western Anatolia resulted in improvements to sculpture. This period, from the 8th to the 5th century BC, is called the Archaic Period.

There are two dominant types of sculpture during this period: male sculptures (kouroi) and female sculptures (korai). As in the Daedalic Period, they are perfectly frontal. The Kouros of Tenea is an excellent example of this style. (Kaltsas & Hardy, 2002: 58). This marble sculpture is in the National Archaeological Museum of Athens and is dated approximately to 530 BC. The pigments used for the hair are still visible, and other details have emerged with UV light. In collaboration with Dr. Ulrike Koch-Brinkmann, Dr. Heinrich Piening successfully determined the colors of the body and the jewelry elements (Brinkmann, www.liebieghaus.de). It is a striking example of the polychromy on kouroi, of which we can see the reconstruction in the Gods in Color exhibition (Brinkmann, <https://www.liebieghaus.de/en/insights/play-color-muses-and-kouros>). The nude skin was painted an orange-brown ochre, and he wears a red headband; his hair is black, and he has azurite blue eyebrows, azurite blue nipples, and azurite blue pubic hair (Figure 19).

For this period, it is also essential to mention the korai, since they have richly decorated dress, are excellent in order to understand the variety of colors marking a continuity of what was used in the Daedalic Period. I will evaluate two korai on which the polychromy has been reconstructed in detail: the Peplos

Kore and the Chios kore from the Acropolis, the first in the Doric tradition the second in that of Chios.

The Peplos Kore is one of the best-known examples of Archaic art. The 117-centimeter-high statue of white Parian marble is dated to 530 BC (Valavanis, 2013: 50) (Figure 20). It was found in 1886 on the Acropolis of Athens, and today is exhibited under inventory number 679 at the Acropolis Museum (Ridgway, 1977: 58). The kore is dressed in a Doric peplos, which was very fashionable when the statue was made (Lee, 2004: 118). Underneath, she wears a thin chiton, of which its fine drapery is visible on the sleeves and the hem of the skirt. Dowel holes on the head and shoulders indicate that the statue had a headdress, presumably a wreath or a helmet, and bronze shoulder brooches. The now missing once outstretched left forearm was worked separately. The posture of her right hand indicates that she has something in her hand, and her left hand is broken, but that arm is bent as if it was also holding something. Originally the sculpture was richly painted. The colors of the hair, eyes, and peplos are still visible, as well as the incisions on her dress, similar to what we saw with the Lady of Auxerre.

There are two reconstructions of this statue interpreted as a representation of Artemis, as shown through the animals painted on her dress (Figure 21) by Brinkmann and his colleagues (Valavanis, 2013: 50). In her first reconstruction, the kore has a yellow dress. Her hair is brown, and her broken arm is missing. Animal figures are painted in green, white, and red on her yellow dress (Brinkmann, 2010: 212). In the second reconstruction, she is holding arrows in her right hand, and her broken arm is completed with a hand holding a bow. On her head is a crown decorated with arrows. The color of the dress is white this time, but the animal figures are also painted with red, white, and green colors. Brinkmann has left her skin tone white. This second interpretation is more appealing because it is a complete sculpture.

The Chios Kore was also found in the Acropolis of Athens and is dated to 520-510 BC. It is named the Chios Kore for two reasons: not only it is made of Chian marble, but it was found with a column on which it was written 'Archermodos from Chios' (Valavanis, 2013: 54). She is wearing a chiton and short himation. Her left arm pulls her skirt to the side, creating volumes. Her right arm is outstretched. Both the carving and painting are very detailed and rich. The colors on the statue are in almost perfect condition and can be seen with the naked eye. In 2010 this figure was analyzed in collaboration with the Athens Acropolis Museum. Nearly all of the colors could be precisely determined. Vinzenz Brinkmann and his colleagues also reconstructed its original appearance (Østergaard and Nielsen, 2014: 139.). It is one of the most ornamental and richly decorated korai, with a white, red, and blue crown and blue-white earrings with highly decorated motifs on her head, and her skin painted in a pinkish tone. Her hair is red, and her eyes are red brown which suit her hair (Figure 22). She has a blue necklace on her neck. Her dress, decorated ornately and with a realistic volume, is detailed in yellow, blue, and red.

3.3. Classical Period

The Classical Age began in the 5th century BC and ended with Alexander the Great's death in 323 BC. The term Classical Age is used to qualify the most mature and *classical* form of Ancient Greek art. The frontality, which had been effective since the Daedalic period and started to dissolve at the end of the Archaic period, disappeared, and sculptures with a sense of movement replaced it. Although the Classical Period is rich in artwork, I have encountered some difficulties finding case studies of polychromatic sculpture for this thesis. In this period, bronze sculptures were generally preferred (Boardman, 1985: 15), but they were melted in the following centuries for weapons or other usages, and we know most of these Classical sculptures from Roman replicas. Therefore, the original sculptures to which I want to limit my case studies are the friezes of the Parthenon.

The Parthenon and its sculptural program by Phidias are crucial for understanding this period, as they survive mostly intact. The sculptures are examples of the Classical Period's excellence, especially when looking at anatomy, body proportions, measure, balance, composition, and harmony. The Parthenon was completed in honour of 432 BC for Athena, the goddess of Athens. After most of the sculptures in the Parthenon were sold to the British Museum and in 1937 all surviving paint on the sculptures was removed by a heavy cleaning process (St Clair, 1999: 412) because plain white marble was thought to be more appropriate. In the 1990s, at the Museum of the Acropolis, a restoration and conservation work of the sculptures of the Parthenon still remaining in Athens was undertaken. During the surface cleaning by Greek archaeologists, color residues on some slabs of the western frieze plaques and red and blue traces on the eastern metopes were revealed (Vlassopoulou, 2010: 218). Despite the pollution of Athens, part of the polychromy of the marbles which were in situ were been preserved. In addition, a research undertaken in 2009 at the British Museum by Giovanni Verri's team, researching the traces of pigments on the belt of Iris and the drapery of Artemis, revealed the presence of Egyptian blue on the two statues of the east pediment (Verri, 2009: 221) (Figure 23).

From the above studies and other research, we know that the Parthenon's frieze, like all other Greek temples elsewhere, had vibrant colors. Organized by the Hellenic-American Cultural Foundation (HAF) under the title *Re-envisioned: The Color and Design of the Parthenon Frieze*, Pavlos Samios, a painter and professor at the Athens School of Fine Arts, has done a reconstitution of the procession of the Panathenaic festival frieze (New Greek TV Inc. NGTV, 2018, 03:15-05:21). The backgrounds are blue, and the hair colors are light brown and yellow; the horses have received light brown, yellow, white, and black colors. The clothes are in pastel pink and green tones. Interestingly, the use of colors in *Phidias Showing the Frieze of the Parthenon to his Friends* painting by Lawrence Alma-Tadema in 1868, mentioned below, is similar to this reconstruction (Prettejohn, 1997: 13). Red, blue, and white were

the dominant colors (Figure 24) (Figure 25). Since the Parthenon is a famous structure mentioned in many sources in detail both in Antiquity and modern times, we can say that its sculptures show in their carving and painting the characteristics of the ideal of the Classical Period.

3.4. Hellenistic Period

The Hellenistic period lasted 300 years, from Alexander the Great's death in 323 BC to the beginning of the Roman Imperial period in 31 BC. Alexander the Great's conquests from Macedonia to India resulted in the blending of various ethnic and cultural arts. The sculptors of that period made their works exaggerated, versatile, and deeply carved. The sculpture of the Hellenistic period is intended to be seen from several angles, giving a sense of depth, movement, and dynamism. Sculptures of this period were reproduced in the Roman period. Although these replicas are considered as Hellenistic sculptures in most sources, as with the Classical sculptures, I will only study the sculptures originally belonging to the Hellenistic Period.

In the Hellenistic period we see the usage of polychromy, but we also witness the emergence of a new trend: monochromy. Monochromy refers to the entire work being painted in one colour.

3.4.1. Polychromy

The so-called Alexander Sarcophagus is an original Hellenistic artifact (Levitan, 2013: 31). The relief sculptures are excellent examples, as the colors survive. The sarcophagus is made of Pentelic marble and has the shape of a Greek temple. It is dated to the late 4th century BC and is decorated with high reliefs depicting battle and lion hunting scenes. Osman Hamdi Bey discovered it in a necropolis near Sidon (Lebanon) in 1887 (Houser, 1998: 281). The work is very well preserved, and it is considered as one of the most important works on display at the Archaeological Museum in Istanbul (Turkey).

This sarcophagus was probably that of King Abdalonymos, the last king of Sidon; he ascended to the throne after Alexander the Great (Heckel, 2006: 385). There is a battle scene between Macedonians and Persians on one of the long sides of the sarcophagus, and on the other, there is a hunting scene (Figure 26). Alexander is featured at one spot with lion skin and horns on the left, and in the middle is King Abdalonymos on horseback. The trouser types and turbans attest to the presence of Persians in this depiction. The sculpturer's technique and the figures' mobility make this work an excellent example of the Hellenistic style (Houser, 1998: 284). One of the first to examine this sarcophagus and write about it in detail was Volkmar von Graeve who interpreted all the reliefs and scenes on the sarcophagus. The scholar found links between the famous Alexander Mosaic in Pompeii and some scenes on this sarcophagus. (von Graeve, 1970: 62) (Figure 27). However, he focused on the figures, not the colors of the sarcophagus and the Alexander Mosaic.

The colours are still visible to the naked eye and look vibrant and alive to this day. It is striking to see that the artists who painted the Sarcophagus were as skilled as the sculptors (Figure 28). The polychromy is very visible because all the figures are in high relief and painted, whereas the background is not painted but simply polished (Kuiper, 2010: 176). Besides, a band with egg and dart decorations and a band with motifs are also painted (Brinkmann et al., 2007: 329). Working on the remaining colors, Brinkmann and his colleagues did a reconstruction. I will only describe a few figures and will focus predominantly on Alexander.

According to this reconstruction, Alexander wears a yellow lion's skin on his head. His brows and eyes are brown, his hair is orange, and his skin is dyed to a nude skin color. He has a white chiton, and the arm sleeves and the belt are yellow. There is a purple cape on his shoulder, and the inner part of this cape has small white patterns on it. His sandals are yellow and red. The horse's color

is brick-color, and its mane and tail are yellow. The white of his eyes is distinct, irises are brown, and his teeth are also white. The saddle has a yellow pattern over the burgundy middle. A mustard-colored leather rope ties the saddle to the horse's chest. A Persian soldier lies under Alexander's feet. This soldier, whose face is invisible, wears a yellow cap, a blue-tipped brown dress, and a yellow belt. His leggings have a red, yellow, and green diamond pattern and they are worn over white and red shoes. In front of him there is the rear end of a running horse (Figure 29). I would like to talk about the work that most impressed me on this sarcophagus. In the battle scene on the sarcophagus, a Persian soldier holds a shield with a plain/undecorated inner surface. Using UV light, a depiction was uncovered inside on that surface: an Achaemenid representation of a God and a soldier. (Brinkmann, 2014: 99) (Figure 30), revealing the detailed work of the artist.

I would like to mention Tanagra figurines briefly, which are essential examples of polychromy. They may reflect the polychromy of sculptures because they were imitated or at least inspired by sculptures. Tanagra figurines are made of terracotta, they were first produced in Athens, but they owe their names to the ones discovered in the necropolis of Tanagra in Boetia. They are dated to between 330 BC and 200 BC (Zink and Porto, 2005: 21). They generally show young women. While applying color on Tanagra figurines, a white slip was applied before firing and then painted with bright and vibrant colors (Alanyalı, 2002: 179). They have been produced in some cities, such as Myrina in Asia Minor (Jeammet, 2017: 2). What makes these figurines significant is that they carry rich polychromy and provide valuable evidence for the various colors available (Dillon, 2012: 23).

The Lady in Blue, housed in the Louvre Museum, is an excellent example (Figure 31). This figurine, thought to have been made between 325-300 BC, wears a blue himation with golden yellow edges and holds a fan in the same colors (Jeammet, 2010: 118). There are many other examples in the catalog of the

Tanagra: Myths and Archeology exhibition (Jeammet, 2003). As can be seen in the catalog, these figurines are painted with shades of blue, red, pink, and yellow, and sometimes a part can be gilded as for the Lady in Blue. Tanagra figurines are very important for us as they also parallel the round sculptures. For example, this figurine displays similar elements with the Herculaneum Women in the Dresden State Art Collections (Figure 32). Because of the style similarity, it is possible to say that the colors are also probably similar.

There are Tanagra figurines in many museums. For example, in the Metropolitan Museum of Art, there are two terracotta figurines of little girls playing *ephedrismos*¹ (Karoglou, 2016: 4). The color of the brown pigments in the hair of these figurines is still visible. They also have pink pigments on their cheeks (Figure 33).

3.4.2. Monochromy

As part of their research in Delos on the use of color on Hellenistic, Brigitte Bourgeois and Philippe Jockey highlighted the unmistakable remains of the original gilding on some of the sculpted marbles (Bourgeois and Jockey, 2004: 331). This specific treatment on the surface is undetectable to the eye or any photographic prospecting; thus, they remained invisible until 2004. The colors They became visible as a result of systematic examination using a video microscope technique. Thanks to this, it is now possible to add these works to the corpus of works in gilded marble; these recent testimonies dated to the Hellenistic Period have a capital importance because they change our perception of the sculptures. The entire surface of the monochrome sculptures of this period is entirely painted in the same color. Three sculptures from Delos have been proved to have traces of gilding on their surface: first of all, the famous copy of Polykleitos' Diadumenos (Palagia, 2015: 719), gilded over its

¹ A Greek game in which a stone was set up at a given distance and balls were thrown at it. (wordnik.com)

entire surface, the trunk-support included (Figure 34). I believe that this new trend commenced to make sculptures appear as if they were made of precious materials such as gold.



CHAPTER 4

POLYCHROMY IN THE ROMAN, THE BYZANTINE AND MEDIEVAL PERIOD



4.1. Roman Period

This section is dedicated to the period lasting from 31 BC to 476 AD, when the Western Roman Empire collapsed. We may say that the main inspiration of Roman sculptures were the Greek sculptures. However, Romans added some innovations such as the sculptures of emperors and dignitaries or busts. Besides polychromy, monochromy, which we saw for the first time in the Hellenistic Period, is also noticeable in the Roman Period. I will divide this section into Roman sculptures based on Greek originals and Roman-origin sculptures, and I will examine each category in terms of polychromy and monochromy.

4.1.1. Roman Sculptures Based on Greek Originals

I do not think that the Roman Sculptures based on Greek originals reflect Greek polychromy. Although Greek art was a source of inspiration for these sculptures, I think they represent the perception of Roman-era aesthetics. Because aesthetics and colors of art are always fluid and change over time.

4.1.1. Polychromy

For the Roman Sculptures based on Greek originals with polychromatic decoration, I will use the Venus of Lovatelli as an example. The sculpture was dated to between 200-201 BC and was found in a villa in Pompeii (Østergaard, 2014: 22). It is now in the National Archaeological Museum of Naples. The colors are still visible, and a reconstruction using these pigments was made by Vinzenz Brinkmann and Ulrike Koch-Brinkmann (Østergaard, 2008: 47). The pastel colors of the cloth and its foldings and Venus' blond hair are quite remarkable. Her hair is yellow, her cape is yellow, the inside of the cape is dyed blue, and her skin is painted a pinkish color. The caryatid next to her is shaped and painted similar to an archaic period kore. She holds her green dress and wears a red himation with yellow edges over it. The head accessory is also green and red, and her hair is brown (Figure 35).

4.1.1.2. Monochromy

Unfortunately, although there are currently no sculptures dated to the Roman Period that are proven to be entirely monochrome by an extensive study such as that carried out on Delos, the evidence there and elsewhere is that this Hellenistic. However, there is one example of monochromy: the head of the statue of a young boy found in The Area of Piazza Dante, which is currently in the Centrale Montemartini Museum, Rome (Figure 36). Gilding can be seen with just the naked eye on the face of this young boy.

Some indirect evidence can be used to prove the existence of monochrome sculptures. In the garden of the House of Venus in a Shell in Pompeii, there is a statue of Mars represented on a fresco (Carver, 2014: 389, Fig.7) (Figure 37). He is naked and his cloak, the feathers of his helmet, the edges of his shield and his skin are entirely painted in the same color. According to an interpretation by Prof. François Queyrel (personal communication), this representation shows the tradition of entirely metal sculpture reproduction. It is also a possibility, however, in my opinion, that it may represent a monochrome painted marble

sculpture, because I think the base of the sculpture on the fresco seems to be made of marble. Unfortunately, the original of this work has not been recovered, and therefore it is not possible to reach a definitive conclusion at this moment.

4.1.2. Roman-origin Sculptures

4.1.2.1. Polychromy

The first example of Roman polychromy to be discussed is the Augustus statue, known as the Prima Porta and made of Parian marble. It was found in Empress Livia's Villa in 1863, 15 km north of Rome, and was added to the Vatican Museum collection. It takes its name from the site of discovery, Prima Porta (Özgan, 2013: 158). It represents the emperor speaking to his troops.

According to Paolo Liverani, the absence of pigment on the skin suggests that the painter had left it white as marmoreal whiteness (Liverani, 2005: 193). Based on such a hypothesis, the polychrome model reconstructed by Liverani has the skin uncolored. However, it should not be interpreted as a first step to the concept of a 'white Greece'. Nevertheless, recently in 2014, two Spanish researchers Emma Zahonero Moreno and Jesús Mendiola Puig have opted for a more nuanced reconstruction with a more natural flesh tone (Moreno and Puig, 2015: 89; Skovmøller, 2020: 18). Their proposal has been critically appraised (Figure 38).

The most apparent difference between these two reconstructions is that the skin in Moreno and Puig's reconstruction is in a natural tone. Apart from that, Liverani used the color blue in the patterns found on the armor's edges, while Moreno and Puig prefer golden yellows. All the remaining colors are the same: the hair, eyes, and eyebrows are brown, the skirt of the cape and the armor are red, and richly decorated with mythological scenes, the cuirass figures are highlighted in reds, blues, and whites.

The second example, dated to a few decades later, is preserved as a portrait bust of the emperor Gaius-Caligula (AD 37-41). In this case, we are sure that the marble's entire surface has had been coated with colors, including the skin (Figure 39). The volume of the curls on the emperor's head were rendered by a set of colored touches intended to modulate the color (Østergaard, 2008: 226). Therefore, the aim was to make a more realistic portrait in the tradition of Republican verism. The pigments on it are in excellent condition and allow reconstruction, which allows us to see the realistic representation of his hair. According to a later reconstruction of Caligula's portrait made by Brinkmann and Scholl in 2010 (Brinkmann and Scholl, 2010: 573), he has brown and layered hair, his brows and lashes are brown, his pupils are black, his eyes are hazel, and his skin is dyed in a pinkish skin color.

4.1.2.2. Monochromy

We do not have examples of monochrome sculptures in the Roman Period. However, we may consider the gilded bronze as an indirect clue, for example, the famous bronze equestrian statue of Marcus Aurelius in Rome (McHam, 1998: 55) (Figure 40). It may not be proof of the existence of monochrome marble, but it may also show the taste for monochromy in the aesthetic perception in sculpture.

4.2. Byzantine Period

Byzantium, later known as Constantinople, was founded in 324AD and was conquered in 1453AD by the Ottomans (Rautman: 2006, 10). Scholarship agrees that art related to Christianity and produced previously in the same region is called early Christian art. With the rise of Christianity, the primary medium for artistic work moved from sculpture to mosaic, so we do not have as many sculptural examples as in the Roman Period. It was the medium chosen to glorify the emperors and the religion.

For this period, I will use the portrait head of the empress Ariadne as my example. It is from Rome and dated to the 5th or 6th century AD (McClanan, 2002: 66) and displayed in the Museum of San Giovanni's Basilica in Lateran. The neck and head of this bust are mounted on the shoulders of an ancient statue (Marano, 2012,

<http://laststatues.classics.ox.ac.uk/database/discussion.php?id=1127>).

Unfortunately, there is no information about the color of the dress of the reused old statue. It portrays a mature woman with bags under her eyes and inlaid irises made of black stone. She has a crown of pearls and colored precious stones. The reddish pigment remains evident on the hair accessory: microscopic analysis identified that it had been applied on the marble surface before the gilding (Figure 41). There is a reconstruction only of the head by Liverani in the Ny Carlsberg Glyptotek in Copenhagen in 2008 (Liverani, & Santamaria, 2014: 283). Similar to his reconstruction of the Augustus Prima Porta, the face and neck are left white. In his interpretation, her eyes are black, and her lips are red. The head accessory is gold and black.

4.3. Medieval Age

The Medieval Age begins with the collapse of the Western Roman Empire in 476 and ends with the beginning of the Renaissance (Drees, 2001: 154). Religious pressure was high in Europe during the Medieval Age, and art was used only for didactic purposes of conveying religious stories (Sekules, 2001: 4). This period was divided into two different styles: Romanesque art became widespread between the 9th and 12th centuries and Gothic art emerged as a style that would convey a sense of heaven (Güven, 2017: 325).

As the first case for this period, I want to mention the Naumburg Cathedral, which is a former Romanesque Cathedral (now a Protestant church). Although it belongs to the Romanesque period in Saxony, it shows the same characteristics as the art in France and can be taken as an example because of the exceptional quality of the Medieval polychromy that survives here. I will focus on the

sculpture of Uta von Ballenstedt dated to the 11th century. She was a noblewoman and patron of Naumburg in 1049. This life-size polychrome statue was carved some two centuries after her death (Jung, 2019: 22). The colors of the statue are incredibly well-preserved (Figure 42). They are visible on the statue's face: her eyebrows are brown, the green of the irises is still visible, her cheeks and lips are red, and her skin is painted pink. The crown is golden yellow, the wimple is white, and the edges of wimple are golden yellow. Her magnificent dress displays red and blue colors, with brooches on the collar with gold details. She holds the collar of her cape closed with one hand, the inside of the collar is blue, and with the other hand adorned with a ring, she grasps the voluminous cloth of her cape. The cape's borders are gold, and the inside of it is a lighter shade of red. It is an excellent example of the use of color in medieval sculptures.

A second example is provided by the relief sculptures of the façade of the Cathedral of Notre-Dame d'Amiens in France. this structure, whose importance is emphasized by it being called *the Parthenon of Gothic Architecture*, unveiled its pigments during an external cleaning in the 1990s (Ribeyrol, 2020: 38). These colours were analysed and a reconstruction of what it would look like in the 13th century was made. According to this study, the relief sculptures on the façade are incredibly colorful (Figure 43)! These statues consist of angels and followers, whose skin are painted in pink tones, dressed in green, yellow, blue, red, white clothes, and also consists of a relatively large figure of Christ sitting in the middle with brown hair, a beard and a white outfit. Both the sculptures and the painting artistry are very impressive.

In these works, we see a less mobile and more one-dimensional style when comparing the two sculptures with the Classical and the Roman Period sculptures. Both examples have no expression on their faces, and their bodies are under thick clothing. The position of the seated Christ seems too uncomfortable. This may indicate that the sculptures are used only for didactic

purposes and have moved away from being aesthetically pleasing and anatomically realistic. The oppressive nature of the feudal regime and religion influenced art and the artists of the period. However, the polychromy of sculptures is entirely a continuation of Greek and Roman use.



CHAPTER 5

FROM POLYCHROMY TO WHITE: FROM THE RENAISSANCE TO THE START OF THE 20TH CENTURY

5.1. Renaissance Period

The understanding of art under the rule of religion and didactic purposes that prevailed in the Medieval Ages changed after the 14th century, and a state of *rebirth* emerged. This rebirth comes from the French word *Renaissance* as the name of this period. In fact, this *Renaissance* was the return to the ancient Greek and Roman roots (Haughton, 2004: 231)

The existence of wealthy merchants in Italian trade centers such as Florence and a greater openness to learning saw the emergence of new approaches to science and to the arts which then spread out to wider Italy, France, and all of Europe (Strathern, 2018: 187).

5.1.1. Polychromy in Renaissance

At the beginning of the Renaissance, polychromy was still in fashion among sculptors. Although the colorful sculptures in Florence in the Early Renaissance are not generally well known, some famous sculptors were still making colorful sculptures. For instance, Donatello made a terracotta Bust of Niccolò Uzzano in the 1430s (Lindsay, 2018: 90) (Figure 44). This bust is now in the Metropolitan

Museum of Art, and the figure's pose, the folded drapery's dynamism, and the realistic coloring bring it to life, fleetingly and permanently. The colors of the statue are very striking. His skin is pinkish, and his cheeks are pink-red, making the portrait very realistic; the fabric of his clothing is shown in brown tones.

Another example of such polychromy is Brunelleschi's Crucifix, also in the Early Renaissance, which is now in the Gondi Chapel of Santa Maria Novella in Florence which was probably made between 1410 and 1415 (Stiberc, 2014: 16). It is made of pear wood (Tarr, 1995: 114) and has polychromatic decoration (Figure 45). In this example, Christ leans to the left with a slight twist on the cross, creating space, inspiring the observer to trace a semicircular path around it. The work is characterized by a comprehensive study of anatomy and proportions, which increases the work's integrity and harmony. The skin of the semi-nude Christ is in pinkish color; the cross he is crucified upon, and his hair are brown, and the crown on his head is a darker brown, and red blood drips from various cuts on his body.

These examples are striking and impressive in their use of polychromy. Nevertheless, we may say that the Renaissance sculpture is thought of in terms of its whiteness; hence, we may talk about the beginning of a new tradition.

5.1.2. The White Revolution

In my opinion, the examples discussed of Renaissance date, made as they are of terracotta and wood, provide information about the understanding of how the use of marble was perceived in this period. Marble was appreciated without having to be coloured, thus commencing a new aesthetic. It started to be loved for itself, so that a new aesthetic started, looking for the brightness achieved after polishing (Goslee, 1978: 188). This new understanding of marble will be mentioned in detail in the following chapters, with the possible reasons for the abandonment of the use of color.

Leonardo da Vinci (1452-1519), in his 'Trattato della Pittura' (A Treatise on Painting), says that sculptures have "meno discorso" (less speech). This phrase means that sculptures do not need colors because their purpose is not to tell stories like a painting; the sculptures' purpose is to be decorative and aesthetic. With these words, he implicitly excluded color from sculptures (Fehrenbach, 2011: 47). Nevertheless, we can generally argue that most things changed with Michelangelo (1475-1564). Interestingly, while he used many different colors in his paintings, he did not use them on sculptures. This may show that he also saw sculptures as *meno discorso*. If we consider his impact on this period, Michelangelo encouraged others not to use polychromy on statuary. White marble sculpture tends to radiate a more mysterious life than its polychromed counterpart, and we could call this the "*emergence of a new life*" (Fehrenbach, 2011: 51). Michelangelo's exemplary and impressive works, such as Pietà (1498-99) located in the St. Peter's Basilica in Vatican City (McHam, 1998: 199), and David (1501-1504) located in the Galleria dell'Accademia (McHam, 1998: 200), are white polished marbles which dazzle people with their brightness.

Michelangelo's Pietà is indeed a classic Renaissance sculpture. The sculpture tells a religious story and showcases Michelangelo's art with the values it symbolizes (Jurkowlaniec, 2015: 179) (Figure 46). The sadness on Mary's face, her posture, the peaceful expression on Christ's face, his sleeping body are all anatomically realistic and striking without any colors, using just carving and polishing and a play of light and shade.

Our second sculpture of the biblical figure David, has been admired by artists and art experts since its creation (Figure 47). Even the art historian Giorgio Vasari expressed his admiration for this sculpture by saying, "No other work of art equals it with such a fair proportion, beauty, and perfection" (Della Monica et al., 2019: 202). Its contrapposto stance was popular in the Classical Period

and is inspired by Antiquity. The veins in his hands and the expression on David's face are quite realistic.

Expressions, realism, and symbols represented without any color can be considered the general features of Renaissance art, which was turned into an academic tradition after the Renaissance Period. This art was born out of the desire of the artists who were free in their creativity after the pressures of the religiously strict and dominant Medieval Ages. They wanted to make works such as the ones of the Classical and Roman Era, which were considered to be the highest achievement of art. Archaeological excavations/work from these times, uncovered some faded pigments that were preserved on the Ancient Greek and Roman sculptures. The tradition of painting the sculptures was abandoned as white statues were considered to be more beautiful and there was a general distaste towards the Middle Ages (Weisinger, 1945: 461). Thus, the white marble statue was viewed as the most visible and iconic symbol of the Western civilization (Rose-Greenland, 2016: 93).

5.2. Baroque Period

The art and architecture of the period from the 1600s to the 1750s is usually referred to as 'Baroque'. The calm figures of classically inspired Renaissance sculpture began to display dynamism, and this realistic representation, including that of violence, and theatrical fiction, is the main feature of the Baroque style. Due to the increase of wealth in Europe, more spectacular structures and artworks emerged during this period (Tschudi, 2018: 179). Very advanced representations of realism were reached similar to the the Renaissance, and details could be shown without the use of color. Even so, color was still employed when thought necessary.

5.2.1. Polychromy

Such an example of Baroque polychrome is the *Dead Christ* by Gregorio Fernández (1631-1636). The sculpture is now in the Metropolitan Museum of Art (Mendoza, 2015: 28). It is a realistic polychromed sculpture made of wood, with details of horn, glass, bone, and cork (Figure 48). The corpse of Christ is downen, ready to be washed and prepared for his funeral. His hair, eyebrows, and beard are brown. The sculptor used glass for the eyes, and the nails are made from bull's horn to add to the lifelike nature of the figure. His mouth is opened to reveal teeth made of bone. Realistic blood flows over his hands and feet from when he was crucified. Drops of red blood are visible in locations such as his chest, through which the spear entered, and his head, on which the crown of thorn is placed. His skin is pinkish white. There is a light blue fabric that covers the intimate areas. He lies on a pillow with navy blue patterns on white and a white sheet.

5.2.2. White Tradition

During the Baroque period, Bernini (1598-1680) opened up a whole new horizon by stating that making the sculptures white and emphasizing details without the use of paints requires more talent (Fehrenbach, 2011: 51). Thus, it was considered that the sculptors who were able to achieve that were more talented than those-using colors. Both Michelangelo in the Renaissance Period and Bernini in the Baroque Period would know that their Greek and Roman ancestors used colors. Bernini demonstrates his theory through his works. One of his masterpieces that clearly shows his perception of *talent* is *The Rape of Proserpina* (1621-1622) (Figure 49). It is now exhibited in Galleria Borghese, Rome (Strunck, 2014: 187). 'Rape' refers to the abduction of Proserpina. This sculptural group is imposing by its realism. The carving and polishing in this sculpture are very realistic. The representation of Pluto's hands on Proserpina is striking due to the detailed carving of tension created on her skin as a result of his grasp on her. Indeed, all the marks and curves that occur when a hand

squeezes the skin are present here. The horror on Proserpina's face and the details on the cloth that partially covers her are impressive. Pluto's wild stance, the disorder of his hair and beard and Cerberus at his feet also reveal his character. Resulting from his talent and impressive work, such as this sculpture, Bernini was a mentor for artists of the period as well as those who followed.

Additionally, we may categorize the *Ecstasy of Saint Teresa* (1647-52) by Bernini as a typical Baroque Period sculpture, representing the transverberation² of Teresa of Avila (Mayor, 1947: 162) (Figure 50). The work is located in the Cornaro Chapel, which was designed and made by the artist. It is thought to be one of the sculptural masterpieces of the High Roman Baroque. The sculpture is inspired by a description written by Saint Teresa of Avila in her autobiography. It describes divine visions, including the one where she saw a young and beautiful angel standing next to her:

"I saw in his hand a long golden spear, at the point of which it looked like there was a small fire [...] The pain was so great that it made me moan, yet the sweetness of this excessive pain was such that I could not want to be rid of it." (Autobiography of Saint Teresa of Avila, Chapter XXIX, paragraph 17)

Columns of polychrome marble frame the group itself, and golden rays made of bronze reflect the light from an oculus hidden from viewers. These are the only colors in this sculpture group. The angel, young and beautiful (like Cupid), dressed in a tunic, with one hand, lifts the saint's habit, while with the other, he holds the bronze arrow. Saint Teresa, dressed in a habit with large rigid folds and is carried by a cloud, stands slumped, eyes closed, mouth half-open, in complete ecstasy before the mystical transverberation and physical piercing of

² Transverberation is a mystical grace wherein the Saint's heart was pierced with a "dart of love" by an angel (Wilson, 1999: 211).

the heart by a lightening as Christ was on the Cross. The body's position and the expression of the face has led modern psychoanalysis to see a form of *eroticism* (Bell, 2008: 25). The stance of the figures and realism of their faces are very striking. Teresa's ecstatic nature, the movement of the cloth, the freedom of her bare feet and hands, and the skin's realism are also very typical of this period.

5.3. Neoclassical Period

The Neoclassical period is a term used to define art produced between the dates of 1750-1830. It results from a longing and desire for *antiquity* and a move away from the Baroque Period's elaborate and dynamic style. Despite modeling their work after the classical period, the Baroque period's perception of beauty was reflected in white/unpainted sculpture. This trend was inspired by factors such as but not limited to the publication of studies on the Pompeii excavations, the ruins of Athens, and the revival of the Roman values. Evidence suggests that the people of this period were aware of the use of color on ancient sculptures. When traces of paint were found on the statue of Artemis of Pompeii in the 1760s, Winckelmann, an important and influential figure of the period, was convinced that this work was not Greek, but a 'less refined' Etruscan artwork because of the presence of colors (Winckelmann, 1972: 116).

The white yet still Classical inspiration on sculpture can be seen on the statue of Jason with the Golden Fleece by Bertel Thorvaldsen (1803) (Figure 51). Its subject comes from Greek mythology; the statue has a Roman-style helmet, and its contrapposto stance is quite appropriate for the Classical and Roman periods. The statue is currently located in the Thorvaldsens Museum in Copenhagen (Carbone, 2016: 8). Had the name of its sculptor and its production date been unknown, it could easily have been mistaken as a statue from ancient Greek and Roman times.

Besides the marble's natural white color, we may see the occasional use of color, restricted to gilded accessories or gilded decoration as seen on The Venus Victrix by Antonio Canova (1808). The statue is currently in the Borghese Gallery in Rome (Johns, 1994: 119) and Pauline Bonaparte, the sister of Napoleon Bonaparte, is depicted as a half-naked Venus reclining at a banquet (Johns, 1994: 28) (Figure 52). Again, if the subject and the person who made the sculpture were not known, it would be mistaken as a sculpture belonging to the Classical or Roman Period. Particularly since the posture of the body as at a symposium on the kline as is found in ancient sculptures. Other examples include a sarcophagus from Sagalassos in the Archaeological Museum of Burdur (Guntram, 2017: 338) (Figure 53) and a Roman river god's statue in the Vatican Museum (Lazzaro: 2011, 74) (Figure 54). Furthermore, some sculptures of women, such as Diana of Versailles in the Louvre Museum, have similar hair styles and facial structures, which are characteristic of Praxiteles (Corso, 2004: 13) (Figure 55). This reveals how the sculptures of the Classical and Roman times were used as the basis for the Neoclassical Period sculptures. There is gilding on the hair and the couch/kline, but otherwise this is pure white marble. According to the sculpture and the period, this application was a mode of propaganda and demonstrated the owner's wealth and power. In short, this coloring was used due to the meaning given to the color gold.

5.4. Auguste Rodin

The French sculpture, Auguste Rodin, (1840- 1917), is considered as a link between academic and modern sculpture (Giustino, 2010: 593). Instead of imitating ancient Greek and Roman sculptures like sculptors from the past, Rodin worked on realistic art and strayed away from idealized anatomical studies. As a result, he is considered as a 19th-century impressionist and naturalist (Adams, 2014: 211) (Schor, 2001: 243). He started a tradition that transformed sculpture through the emotion and imagination of the artist and the audience. In addition, he moved away from the *idealized* understanding of the beauty that came from the ancient Greek and Roman traditions and sculpted everything as he saw it (Rodin, 1983: 21). Although he carved realistic

representations, Rodin preferred to leave his sculptures in the natural color of marble. He even made sculptures that could have different meanings under different lights using their shape (Langlais et al., 2016: 248). He had a style that revealed the material itself, polished or roughly carved with the chisel.

Marble was a popular material, and his assistants produced about four hundred marbles with Rodin's entrepreneurial mind. For Rodin, who also produced many bronze statues, marble's relationship with light and shadow was fundamental and he demanded that the sculptures be exposed to natural light (Vandenbrouck-Przybylski, 2012: 786). Though naturalism became the new trend, the absence of polychromy did not change. Instead of using colour to provide realistic effects, this was achieved through intricate details and polishing.

There was a special exhibition at the Rodin Museum in Paris, which opened on June 8, 2012, called *Rodin, La Chair, Le Marbre (Rodin, The Flesh, The Marble)* (Musée Rodin, <http://www.musee-rodin.fr/en/exhibition/rodin-flesh-and-marble>). What makes this exhibition, and these works unique is that Rodin uses rough and carved marble side by side in his sculptures. One of his most notable works is *Danaïd*, which he made in 1889 (Hinnars, 2016: 160). This sculpture is based on a mythological story and is one of the works that best shows how marble is turned into flesh (Vandenbrouck-Przybylski, 2012: 786). The model Camille Claudel, a student of Rodin's, is posed in such a strained body position that it reveals all her tense muscles and bone details. Rodin replicates this in a realistic way and polishes the marble that represents her body to make it flesh-like and leaves other parts unpolished to create a striking contrast.

CHAPTER 6

THE PERCEPTIONS OF COLOR IN ANCIENT STATUARY FROM THE 18TH CENTURY TO MODERN TIMES

In the initial stages of the development of archaeology and art history as disciplines, the perception of polychromy was influenced by some prominent names. This chapter review these scholars and their perceptions on the use of color on statuary starting from the 18th century until today.

6.1. The Perceptions of 18th Century

Johann Joachim Winckelmann (1717-1768) is without a doubt a notable name in this field. His ideas influenced many others after him. We know that Winckelmann was aware of the existence of colors in Classical Antiquity as he mentions the use of colors on sculpture in Chapter 2 'The Essential of Art' in his book *Writing on Art* (1972: 116). He stated that color is also a part of art, but "the whiter the body (of sculpture) is, the more beautiful it is" (1972: 117).

I would also like to mention Étienne Maurice Falconet (1716- 1791) who made sculptures in the Baroque, Rococo, and Neoclassical Periods. Falconet, an

essential and influential name for all three periods, made very striking comments in an article named *Sculpture*:

"Doubtlessly, substances of different hues, used judiciously, can produce picturesque effects but distributed without harmony, such juxtaposition makes sculpture disagreeable, even shocking. The man of taste will be disgusted. The surest thing would be to use gold, bronze, or different marbles for decoration only" (1765: 835).

6.2. The Perceptions of the 19th Century Scholars

Adolf Fürtwangler (1853-1907), a German archaeologist, art historian, and museum director, had a powerful impact on art history with regards to antiquity. He became the director of the Glyptothek in Munich, and interestingly, he organized an exhibition that contained the colorful façade of Aigina. This example demonstrates that it was known that these sculptures were originally painted. Nevertheless, in my opinion, the main goal was not to show reality; but probably to use colors as a vehicle to attract attention. It is more likely that if he had thought that the *reality* and the presence of colors were more attractive, he would talk about it in his writings.

Moreover, the details in the paintings of Lawrence Alma-Tadema, a great late-nineteenth-century painter, are truly admirable. He has paintings in which he depicts Ancient Greece, Rome, and Egypt, and he painted architectural elements that were mostly seen as ruins in their reconstructed shapes. One of these notable works is *Phidias Showing the Parthenon's Frieze to his Friends* (1868) (Figure 56). In this picture, he depicted the Parthenon's friezes as Phidias showed them during the construction phase: painted with a blue background and red-white-yellow and skin colors. These colors were corroborated with modern research.

Still in the late 19th century, in spite of the paintings of Alma-Tadema, the perception of scholars was that white was considered to be more beautiful. However, in 1888, Louis Courajod (1841-1896) wrote his book *Polychromy in the Middle Ages and the Renaissance statuary* which contradicted the widely agreed notion that white was more beautiful. Although he only mentions the transition from the Middle Ages to the Renaissance, we can understand from the following sentence that he appreciated works containing polychromy: "We can generally argue that it was Michelangelo who, in our West, definitively destroyed the polychromy proper in the statuary (Courajod, 1888: 35)."

6.3. The Perceptions of the 20th Century Scholars

The 20th century is best examined in two parts as visible changes took place 1950s.

6.3.1. The First Half of the 20th Century

What had happened to the Parthenon friezes, one of the most significant works of the Ancient Greek world when they were restored, is very important to understand the color perception of the period. We learn from a claim by the British historian William St Clair at Cambridge University that when the Parthenon marbles were prepared to be exhibited in the British Museum in 1937-38, they were abraded and cleaned with metal chisels to make them look whiter and cleaner (St Clair, 2004: 11). According to St Clair, this order was given by Lord Duveen, who disliked the honey-colored patina and remaining colors and financially supported the renovation. This claim shows the perception in the early 1900s. Rather than looking for colors and reality, we can see that scholars and others insisted on pure white marble. In 1998, the Greek Minister of Culture of the time, Elisavet Papazoi, stated in her speech that the friezes were *irreversibly damaged due to the British's cleaning in the 30s* (Smith, H., 12 Nov 1999: theguardian.com).

After the 1940s, the perceptions and the way of looking at Greek sculptures began to change. Gisela M.A. Richter (1882-1972), a scholar on Greek art, co-authored an article presenting case studies on the use of polychromy with the Egyptologist Lindsey F. Hall called *Polychromy in Greek Sculpture with Special Reference to the Archaic Attic Gravestones in the Metropolitan Museum*. In this article, she reconstructed only visible pigments and wax residues, included technical information described by Vitruvius's definition of *ganosis* (Richter, 1944: 236-237) This article is essential for our understanding of the evolution of modern perception on the subject.

6.3.2. The Second Half of the 20th Century

6.3.2.1. Full Recognition

One of the first to oppose the white tradition adopted by Winckelmann's followers was Jean Marcadé (1920-2012). In his article *Les trouvailles de la Maison dite de l'Hermès à Délos* published in 1953, he studied the findings from that site uncovered during the excavations. When referring to the *Youthful hairless Hermès*, he mentioned that red and yellow colors were visible (Marcadé, 1953: 512). There are also many other finds that he describes in detail. One of the most impressive ones is the *Polychrome female statuette*. It is a statue with an unusually well-preserved polychromy and again very clearly described by him (1953: 550).

Rhys Carpenter (1889-1980) is also one of the most influential writers. In his book *Greek Sculpture*, he describes the sculptures from the Archaic Period to the Renaissance. He uses the word *polychromy* and mentions color on the sculptures and examples of Polykleitos (Carpenter, 1960: 208).

Brunilde S. Ridgway (1929-) was a student of Carpenter. In her article "*The Peplos Kore, Acropolis 679*", she analyzes the still visible vivid colors of the statue (Ridgway, 1977: 52). This prolific author mentions polychromy on

ancient statuary in her other books. For example, in *Prayers in Stone: Greek Architectural Sculpture*, she writes that remaining pigments can be seen on ancient sculptures (Ridgway, 1999: 107). In her *From Pergamon to Sperlonga: Sculpture and Context*, she notes that the horses on the Pergamon altar (Ridgway, 2000: 44) and the Ammendola Sarcophagus (Ridgway, 2000: 210) were painted. Unfortunately, she did not give a detailed description. It is also worth noting that this influential academic continues her research in the 21st century. In 2004, she published the book *Second Chance: Greek Sculpture Studies Revisited* and presented new views on her previous works.

6.3.2.2. Partial Recognition of polychromy

R. R. R. Smith (1954-) is one of the most critical and influential scholars on ancient statuary, in particular of the Hellenistic and Roman periods. Yet his book *Hellenistic Sculpture: A Handbook* does not mention polychromy, except for the Tanagra figurines (Smith, 1991: 8) and the Sarcophagus of Alexander (Smith, 1991: 151), for which, the colors are briefly mentioned.

6.4. The Perceptions of 21st Century

Nevertheless, the real leap in perceptions about the use of color on statuary began in the 1990s with technological advancements and continues to this day with research devoted explicitly to the colors and pigments.

6.4.1 Scholarly Perspective and Recognition of the Polychromy

With the use of technologies such as spectroscopy and UV rays mentioned in the second chapter, polychromy studies have opened up a whole new avenue. The French archaeologist François Queyrel's 2016 book *La sculpture hellénistique, 1: Formes, thèmes et fonctions* contains detailed information on polychromy. There are also descriptions of the use of polychromy in *Les portraits des Attalides : fonction et représentation* (2003 : 128,180). In the Greek Archeology course given in École Pratique des Hautes Études and Louvre, which guided me in my

research for this thesis, François Queyrel contributed significantly to studying the sculptures and the understanding of their colors.

I also want to mention two works by the French art historian and archaeologist Philippe Jockey, who shared his ideas on polychromy with me. In his book *Le mythe de la Grèce blanche* (2013), Jockey mentions how the polychromy of Greek sculptures faced oblivion over the centuries, giving many details from the meaning of the colors to their perception. In a book that he edited, *Les arts de la couleur en Grèce ancienne ... et ailleurs: Approches*, in 2018, he talks about colors and how they are used. Together with Brigitte Bourgeois, in the chapter *Ombres et Lumières. La sculpture hellénistique polychrome et dorée de Délos*, he gives information about the multicolored and monochrome gilded Hellenistic sculptures found in the Delos Island excavations that I described in the Hellenistic polychromy chapter (2018: 148). The 3D reconstructions are striking in that work. In particular, the group of Artemis Elaphebola A449 is an example of what should be done for all pigmented sculptures (2018: 166) as realism is gained with such a significant 3D reconstruction. In the chapter *Reflections on Color Coding in Roman Art*, another archaeologist, Paolo Liverani, gives a lot of information on the meanings of colors in sculptures and the polychromy of the Augustus Prima Porta (2018:367), also described in the section of Roman sculptures.

Brigitte Bourgeois and Violaine Jeammet, both significant researchers on polychromy, have done very impressive studies. In the article *The Polychromy of Greek Terracotta: Material Approach to a Pictorial Culture* (2020), they present the coloring techniques of Greek terracotta figurines in the Louvre Museum, from Archaic to Hellenistic times. They discuss the manufacturing processes of pigments, the colors that are still visible today, and their analysis of examples with no visible coloration by using UV technology. With some exceptions, such as the Mask of Dionysus from Boeotia (2020: 21), the article is mainly about the Tanagra figurines that are mentioned in the Hellenistic Period chapter.

The classicist Mark Bradley is another essential researcher of polychromy on ancient sculpture. In his article, "*The Importance of Color on Ancient Marble Sculptures*," he wrote about Rome's perception of color (2009). This article and his book "*Color and Meaning in Ancient Rome*" (2009) have been developed from his doctoral thesis "*Concepts of color in ancient Rome*" (University of Cambridge, 2004) (Bradley, 2009: 450).

Finally, Harikleia Brecolaki discusses color perception and scientific methods for researching colors in her articles "*Precious Colors in Ancient Greek Polychromy and Painting*" (2014) and "*Color and Painting Technique on the Archaic Panels from Pitsa, Corinthia*" (2017).

All these authors study polychromy on sculpture in detail. Moreover, Vinzenz Brinkmann and Ulrich Koch-Brinkmann's research with replicas of the painted sculptures created a tremendous impression on many, because it they were innovative and informative. I decided to write this thesis after studying their exhibition *Bunte Götter (Gods in Color): The colors of ancient sculpture* (2003) in Glyptothek, Munich, and then seeing the catalog of this exhibition *Colorful gods: The colors of ancient sculpture* (2008). This work is unusual as it shows the sculptures with the reconstitution of their colors. We understand, know, read about colors, but most of the time, we cannot fully imagine them unless we see them. We may say that this exhibition has fulfilled this need and turned over a new page by showing colors that we can see with our eyes. These colors, which can usually be seen only by specific methods such as microscopes and XRF, become accessible through this exhibition. After these publications and research, since 2008, they have continued their *Gods in Color* exhibitions in another museum every year. Also, their research is published in the book titled *Gods in Color: Polychromy in the Ancient World* (2017). Vinzenz Brinkmann and his team also have a website, online tours,

(<https://www.liebieghaus.de/en/exhibitions/gods-color>), and a very active YouTube channel for those who have not been to the exhibition.

6.4.2. Partial recognition of the Museums

Some museums give importance to polychromy in their exhibition. The method of displaying colorful sculptures in the new Acropolis Museum is exemplary. There is, for example, among others a replica of the Peplos Kore as a 3D representation of its painted version. A separate exhibition section shows the main pigments used in paintings. The Alexander Sarcophagus in Istanbul Archaeological Museum is another interesting case, and it is exhibited together with a reconstruction of its original polychromy on a panel.

Although these examples indicate that there is an initiative to display the reality of polychromy in ancient statuary, many renowned museums have still not taken a step in that direction. Typically, in most museums there is only a short statement such as 'this sculpture was also painted' if any at all. This situation shows the attitude towards colored sculptures, which consequently delays the possibility for viewers to get accustomed to the idea of polychromatic sculptures.

6.4.3. Non-scholarly Perspective

Although it is scientifically proven that there were colors on sculptures, I think that there is still a contemporary resistance. People do not get used to seeing things differently from what they are used to. Contemporary resistance, which is visible in academia and museums, also exists in the non-scholarly area. Considering all this research over the years which prove the existence of polychromy, the possible reasons for contemporary resistance from non-scholars are mainly political or aesthetic and they are due to a traditional perception.

6.4.3.1. The Political Resistance

The political reason, even if there is a small audience, is that some political groups associate the whiteness of the statues with race. A fascinating article named *The Parthenon Marbles as Icons of Nationalism in Nineteenth Century Britain* by Fiona Rose-Greenland from the Department of Sociology, the University of Michigan, examines the situation. Using the newspapers and documents of that period (19th century), she tries to answer the question "How did the Parthenon sculptures, products of non-British artisans and a non-British place, become powerfully connected to British nationhood" (2013: 2). She suggests that the Parthenon marbles were taken from Greece when arts were a strong symbol with a distinctive 'cultural character' to help the people to connect with their states (2013: 3).

Such thoughts attributed to objects are habitual and cause these understandings to be passed down through generations. Nations or movements may add meaning to art for unity or power which they need from time to time. For example, we can see this from contemporary white supremacist groups such as Identity Evropa, which used white images of ancient Greek and Roman sculptures in their propaganda. It was founded in 2016, inspiring by the thoughts and teaching of Hitler. Furthermore, this group violently threatened a classical history professor after publishing an article on the ancient world's true-color sculpture preference in June 2018 (Hart, 2018), showing that such perception is still valid today.

6.4.3.2. The Aesthetical Resistance

Another reason for resistance is the aesthetic tradition. People are unaccustomed to the idea of colorful ancient sculpture, and for that reason, want to see white sculptures. A person gets used to seeing something and then assumes that this is the reality. For this reason, maybe, the museums do not have much information and exhibitions on polychromy. Hence, to keep the marbles white also aims to keep tourist satisfaction. However, this creates a

vicious cycle as the more people see white sculpture, the more widespread this aesthetic and expectation becomes. Of course, it does not mean that the sculptures should be restored with colors, and it is clear that exhibitions such as the Brinkmanns' are not possible everywhere for financial reasons and for the space it would require in a museum if the original should be kept next to the 3D painted reproduction. However, this problem can be solved with panels that contain reconstructed drawings and some 3D examples, as it is done in Istanbul for the Sarcophagus of Alexander.

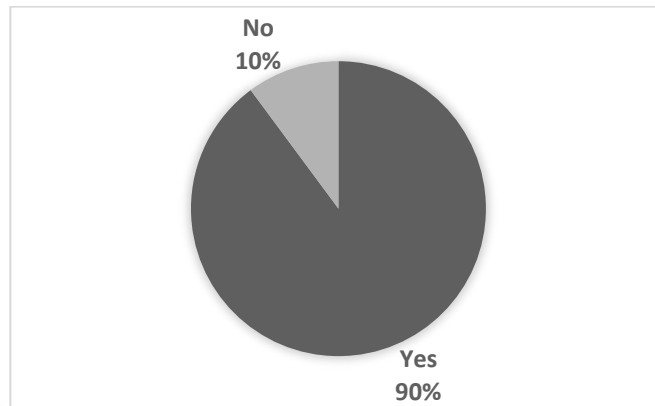
Since I attribute this resistance to aesthetical habit, I wanted to indicate it with a small survey study. In this study, 240 people from different age ranges, genders, and occupations (as archaeologists and non-archaeologists) shared their thoughts.

The same questions were asked to both groups, and the information I received is as follows:

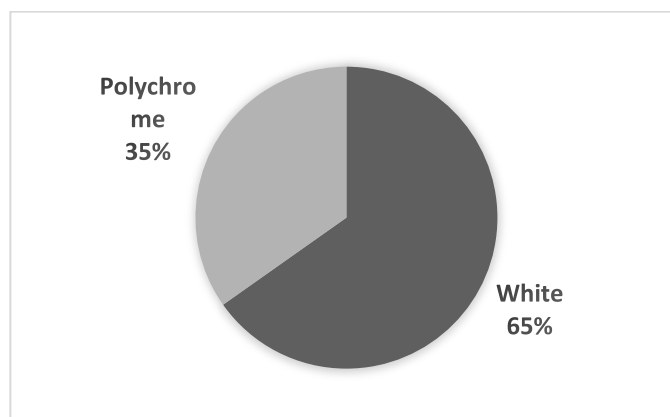
- 70 archaeologists participated in my survey; 44 were women, and 24 were men; 2 people did not want to share their genders.

Age range	Number of participants
20-30	60
31-40	6
41-50	2
51-60	1
61-70	1

The responses of archaeologists to the question of "Did you know that the originals of Ancient Greek and Roman Sculptures were colored?" show that 10% did not know.



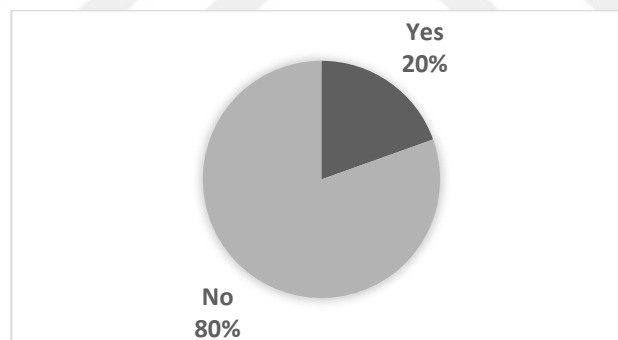
The responses to the question "Are the white sculptures more beautiful, or are the colorful sculptures more beautiful?" are as follows:



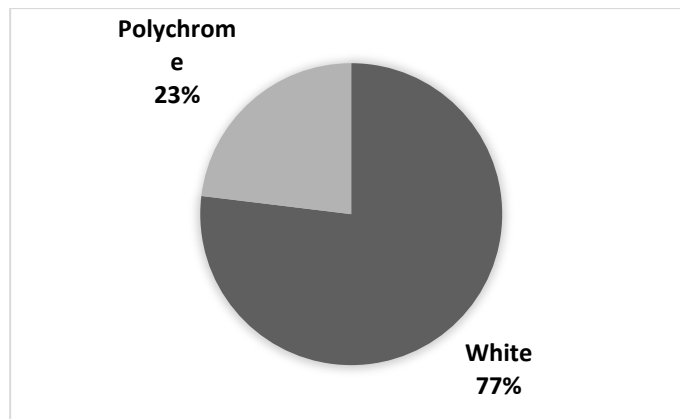
- 170 non-archaeologists responded: 104 women, 61 men, and 5 did not share their gender.

Age range	Number of participants
20-30	67
31-40	23
41-50	24
51-60	38
61-70	18

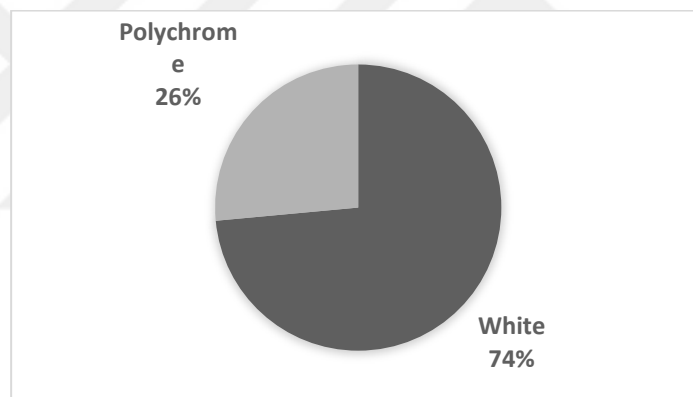
The responses of non-archaeologists to the question of "Did you know that the originals of Ancient Greek and Roman Sculptures were colored?" are as follows:



The answers to the question "Are the white sculptures more beautiful, or are the colorful sculptures more beautiful?" are as follows:



- As can be seen from the results, white sculpture is considered more beautiful by modern people, regardless of profession and prior knowledge.



This survey demonstrates that people need to see something often to find it aesthetically beautiful. The non-archaeologists accept the idea of polychromy slightly more than archaeologists. Although archaeologists or those who have knowledge on the subject accept that the sculptures were colorful, this knowledge cannot enable them to find the colored sculptures as aesthetically more beautiful. So, unless we bring this reality to life through more visuals, it will continue to be partially ignored.

CHAPTER 7

POSSIBLE REASONS FOR THE USE AND ABANDONMENT OF COLOR ON SCULPTURES

In this section, I will look for the possible reasons to use color on sculptures from the Daedalic Period to the Medieval Ages and the possible reasons why this use was abandoned during and after the Renaissance.

7.1. Five Possible Reasons Why Colors Were Used from the Daedalic Period to the Medieval Ages

I tried to combine the ancient sources and my background in Ancient Greek and Roman civilizations and find five possible main reasons why colors were used on sculptures starting in the Daedalic Period. These reasons will still be there in the Byzantine Period and the Middle Ages in Europe. Mark Bradley's article *The Importance of Colour on Ancient Marble Sculpture* assesses sculptural polychromy's significance in Rome under four headings: visibility, finish, realism, and trompe-l'oeil (Bradley, 2009: 428). This paper has convincing arguments for possible reasons for the use of colors. Greek artists started and continued to use colors for specific purposes, to demonstrate this, I will focus on Greek sculptures.

The first one is *visibility*. As we know, ancient Greek sculptures were mostly made for religious or prestigious purposes. Thus, they were generally used in open air and often in high places such as on marble bases or pediments. Even very detailed and realistic marble reliefs could not be seen clearly five meters above the ground in the Greek sunlight. In cases where they were indoors, the lighting in closed areas at that time with oil lamps made it difficult to see the details.

Nevertheless, if all the details, such as eyebrows or nails, were painted, they could be seen immediately. For example, the research of Ulrike Koch-Brinkmann and Vinzenz Brinkmann shows that the archer of the pedimental sculpture of the Temple of Aphaia from early 5th BC uses intense pigments (Figure 57). Moreover, with the virtual 3D reconstruction study of András Patay-Horváth, we may see colors on the east pediment of the temple of Zeus at Olympia and how these then stand out from their background (Patay-Horváth, 2012: 5) (Figure 58).

The second reason is realism. It is widely accepted that, especially for Greeks, realism in art was a significant fact. Greek art provided the model of what they called the ideal beauty: an art where reality is defined by searching for formal perfection resulting from an intellectual approach (Bradley, 2009). After carving a sculpture's details, they painted them in their original colors. Plato had also mentioned realism and ideal beauty in a section of the Republic, comparing the correctly painted statue to the correctly organized state; he draws attention to the role of color in achieving mimesis³: "It is as if someone were to approach us as we were painting a statue and criticize us, saying that we did not apply the most beautiful pigments to the most beautiful parts of the image... by assigning what is appropriate to each part, we make the whole beautiful (Book X, 597e)." However, the monochrome sculptures from the Hellenistic and Roman Periods

³ Mimesis: the act of representing or imitating reality in art.
(<https://dictionary.cambridge.org/tr/s%C3%B6zl%C3%BCk/ingilizce/mimesis>)

indicate that the purpose of realism was not always a key factor in the way the sculpture was presented to the viewer.

Then comes *meaning*. The use and preference of particular colors in ancient Greek polychromy was also determined by each artwork's function and goal in its particular social and cultural context. Some colors had specific meanings associated with them according to mythology and culture. For example, according to Gage, red had a wide variety of symbolic meanings including life, vitality, strength, war, courage, anger, love, and religious fervor (1999: 26). All the red we often see from the Daedalic period to the Middle Ages may have been used in this context. For example, the Lady of Auxerre statue is a sculpture belonging to the funerary context (Gunther & Bagna-Dulyachinda, 2020: 162), and the reds on her dress can be an example of using red in the meaning of soul or life. On the other hand, the purple color has become a royal symbol in the Mediterranean basin (McGovern & Michel, 1990: 153). This is how, for example, the purple toga on the 3D-reproduced Caligula sculpture may be explained (Figure 59).

The fourth reason is *completion*. For Greeks, the unpainted sculpture was not as beautiful and finished as the painted one. Polishing and painting were the final touches of a sculpture. For instance, in his *Imagines* 7–8, Lucian discussed the final stages of the complete statue, and he talks about painting and *ganosis* within these phases. In *Natural History* 35.133, Pliny the Elder mentions that Praxiteles was the one who made the sculptures, and Nikias, the painter, was the one who *finished* them. These may show us that to make a beautiful and complete sculpture, they needed color.

The last reason is *tradition*. Trade in materials and cultural concepts between Egypt and Crete existed even in the 18th century BC (Cline, 2007: 193). Although our first examples of Greek sculptures date to the Daedalic Period and were followed by the Archaic Period ones, we may see the similarity with the

Egyptian sculptures in style and the coloring (Charron, 2016: 2). We know that Egyptian sculptures made of limestone were also painted, for example, Prince Rahotep and his wife, Nofret, from the Fourth Dynasty of Egypt (c. 2660 BC) (Figure 60). Thus, it is very probable that while the Greeks were inspired by the Egyptian sculptural style, they may have absorbed to a greater extent the concept of using color to highlight aspects of sculpture. They improved their sculpture and painted style, but it became the norm to use colors and rendering it into a Greek tradition despite being adapted from elsewhere.

7.2. Three Possible Reasons for the Abandonment of Colors in the Renaissance and After

Starting with the Renaissance, under the influence of Michelangelo, the abandonment of colors in statuary began, and it continued until today. There were some polychrome sculptures made in the Renaissance, on sculptures made of materials such as wood and terracotta perhaps conforming to the aforementioned five possible reasons, or maybe to hide the material itself. However, for sculptures made of stone, mainly marble, rejection of polychromy became the new trend in the Renaissance, and the artists of the later period continued with the white tradition. I think that there are reasons for this 'whitening' movement that started in the Renaissance and continued in the following periods. In this section, I will try to understand the reasons for this abandonment.

The first reason for the Renaissance's abandonment of colors is *contempt towards the Middle Ages*. Artistic events should be evaluated under the conditions of the period in which they happen. There was distaste towards the Medieval Age's scholastic thoughts that restricted the artist and the art (Ziss, 2016: 54-55) as there were rules imposed on art and artists by religious repression and state administration affiliated to the church for many years. Therefore, the restricted artists were angry with medieval rule when they were liberated. So much so that artists after that time tended to produce completely

different works from the Medieval period. In this case, we can consider the Renaissance as a determined rejection of the styles found appropriate in the Medieval Ages.

The second reason is the *admiration for Antiquity*. In the Renaissance and later periods, ancient Greek and Roman sculptures began to be found and displayed. For example, the sculpture group Laocoon and his sons, which inspired many artists after their discovery, was found in a vineyard in 1506 (Corrêa, 2009: 85) (Figure 61). The ancient sculptures, which were not recorded or did not attract much attention before, suddenly became the subject of research and art. It is inevitable that, combined with the rage against the Medieval Period, which was the previous cause, a desire to make sculptures similar to antique ones emerged. It is interesting that the Renaissance period ideal was to produce art and progress culturally like ancient Greece and Rome (Ünlü, 2018: 117). However, while trying to produce sculptures like the ancients, they abandoned the colors that were an integral part of ancient sculptures. They may also not have understood how the polychromy was from the color remains.

The last reason is the beginning of *a new tradition* for the periods following the Renaissance. The artists of the Baroque, Neoclassical and after, have willingly continued to give value to marble sculpture without polychromy. As we mentioned in the Renaissance chapter, we always remember that period with its white sculptures, even if polychrome sculptures were produced in this period. The fact that a great artist like Michelangelo is one of the pioneers of this trend may be a reason. His work which was admired by the artists and viewers of both his time and after, has contributed to the change of the perception of beauty and art. I believe that this period is a *breaking point* in the perception of sculpture and that it has influenced the post-Renaissance periods by starting a *new tradition*.

I think that colors started to be used, were continued, and then were rejected for the precise reasons which I have examined above. Understanding these reasons is crucial to investigating the change and evolution of the color perception. Moreover, these possible reasons help to understand the past artists and explain how the art of sculpture has changed over time.



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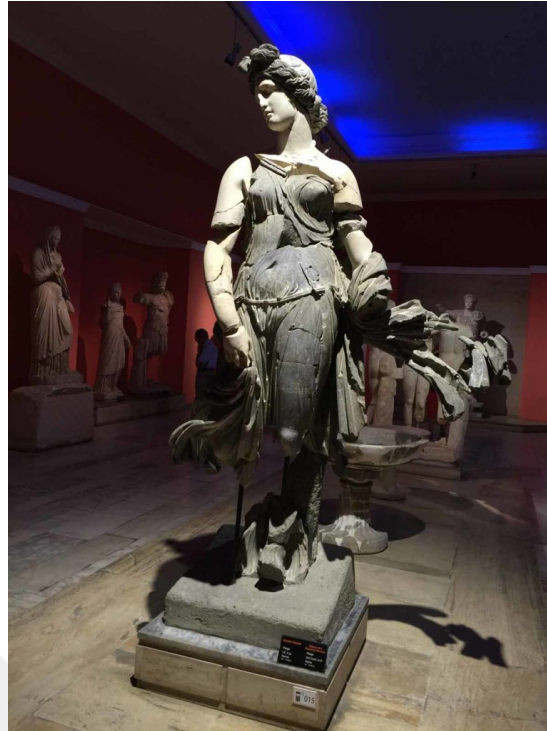


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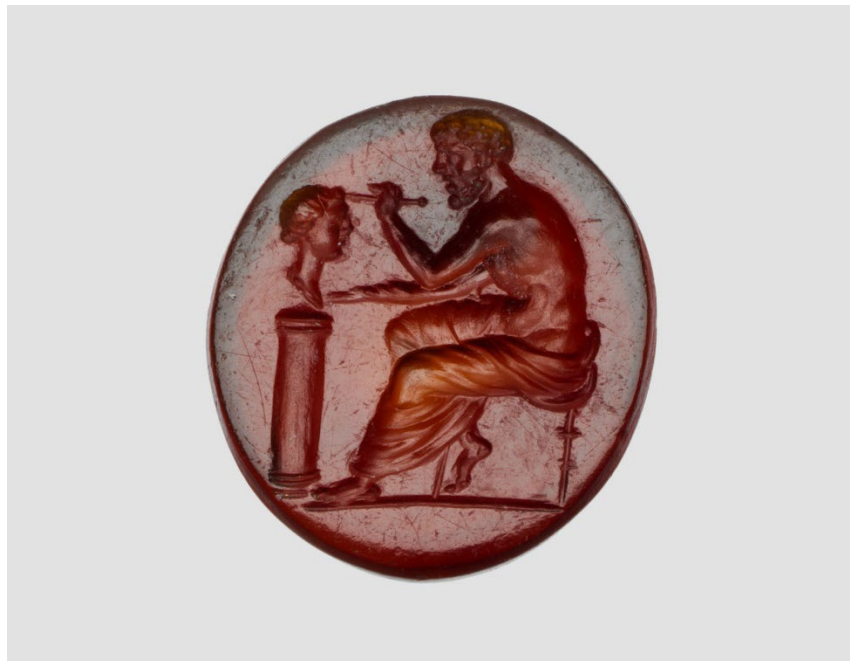


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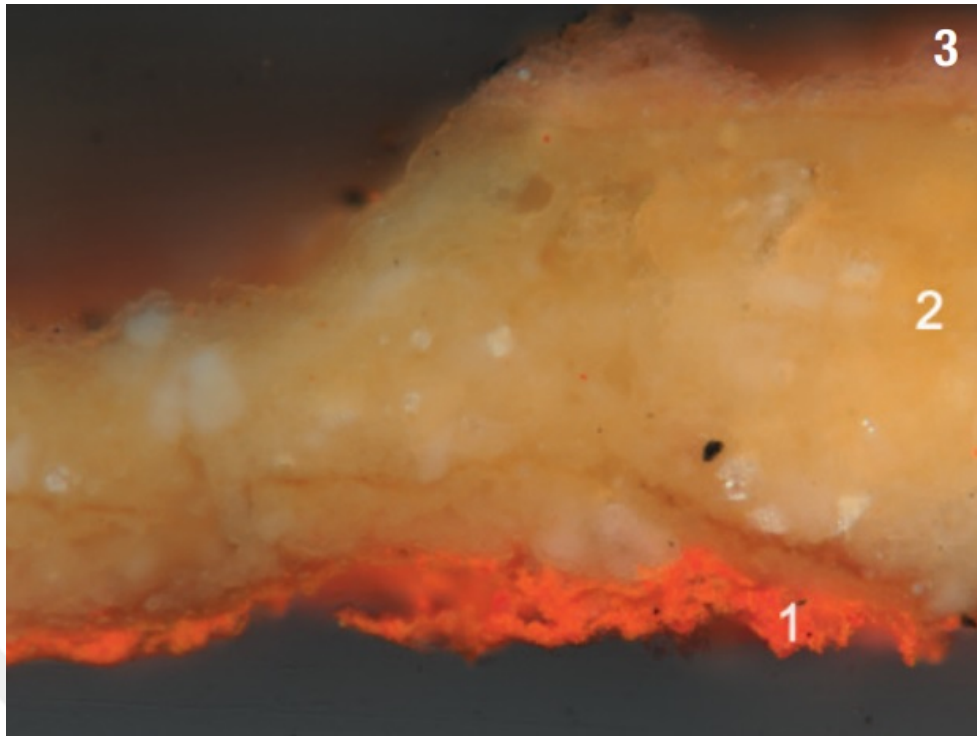


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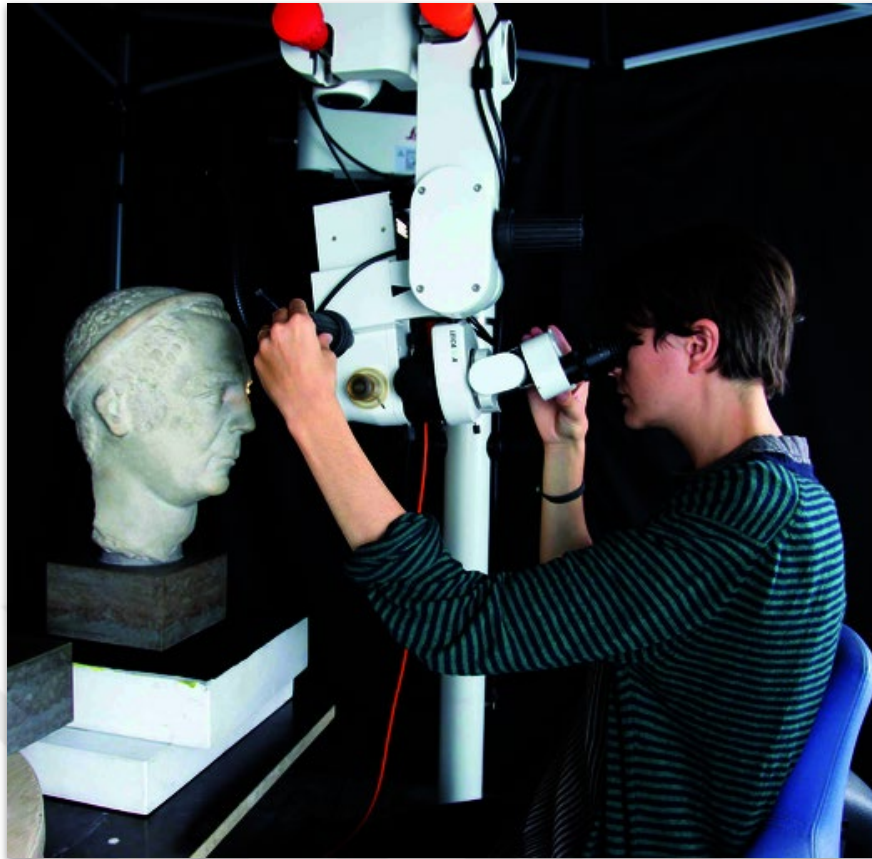


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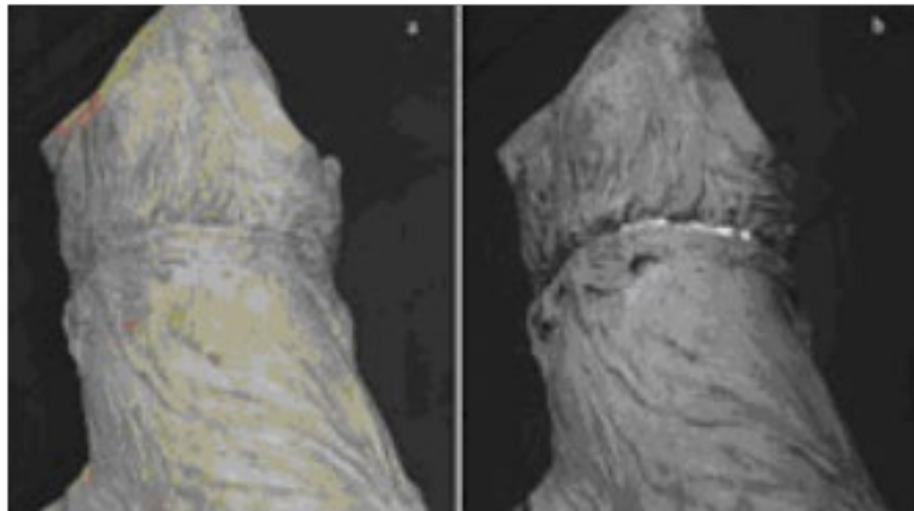


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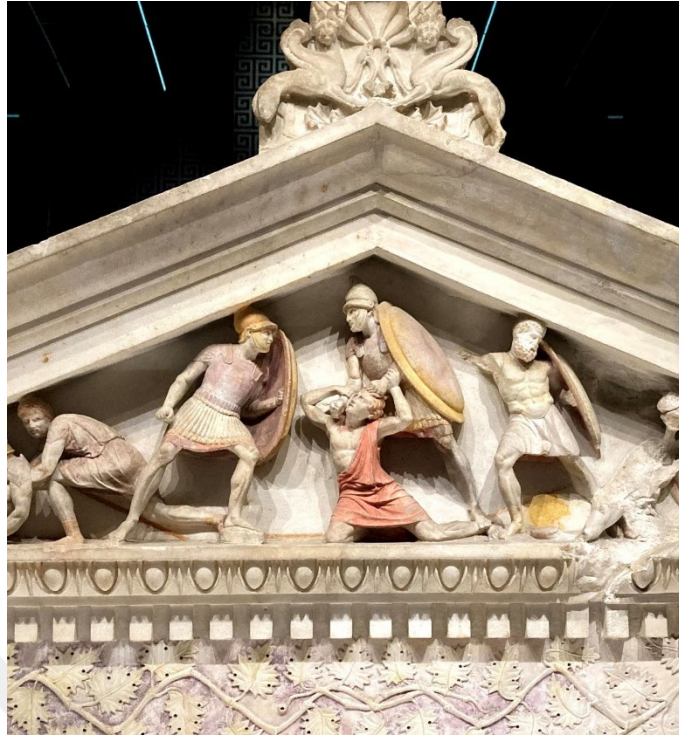


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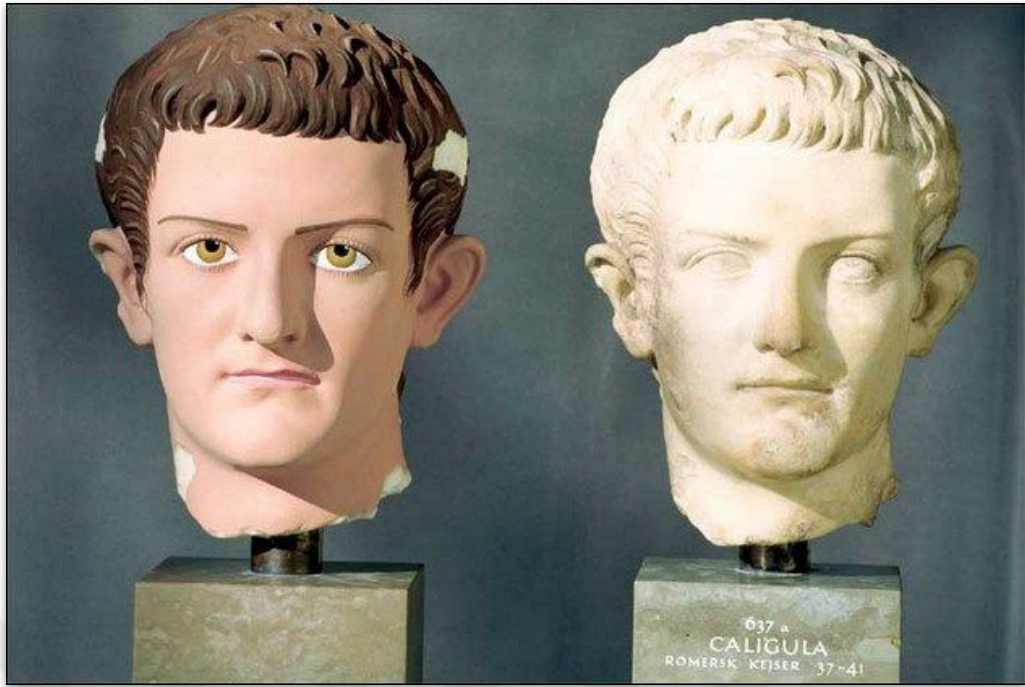


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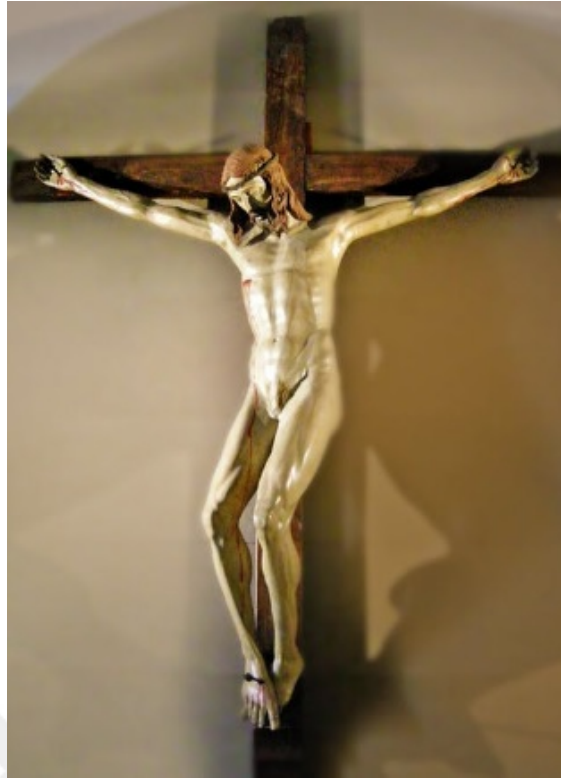


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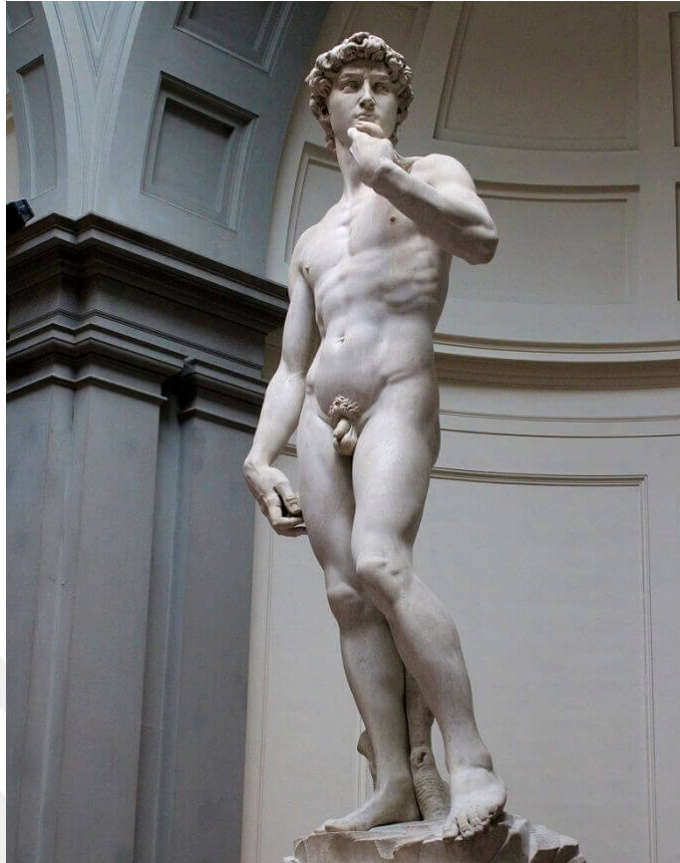


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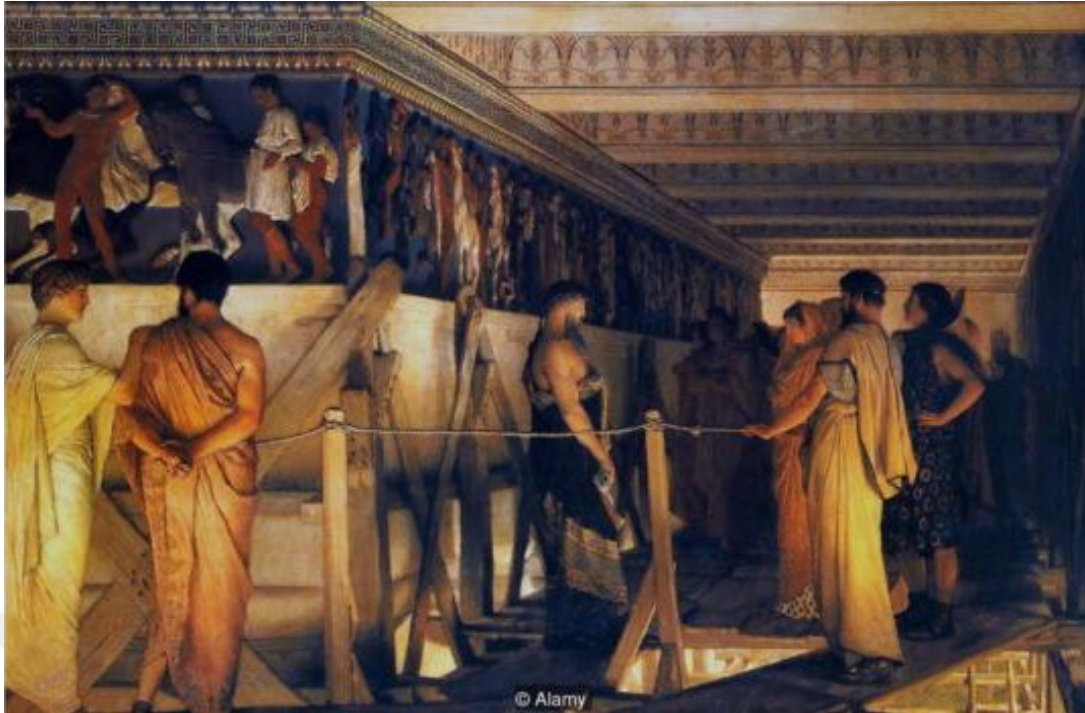


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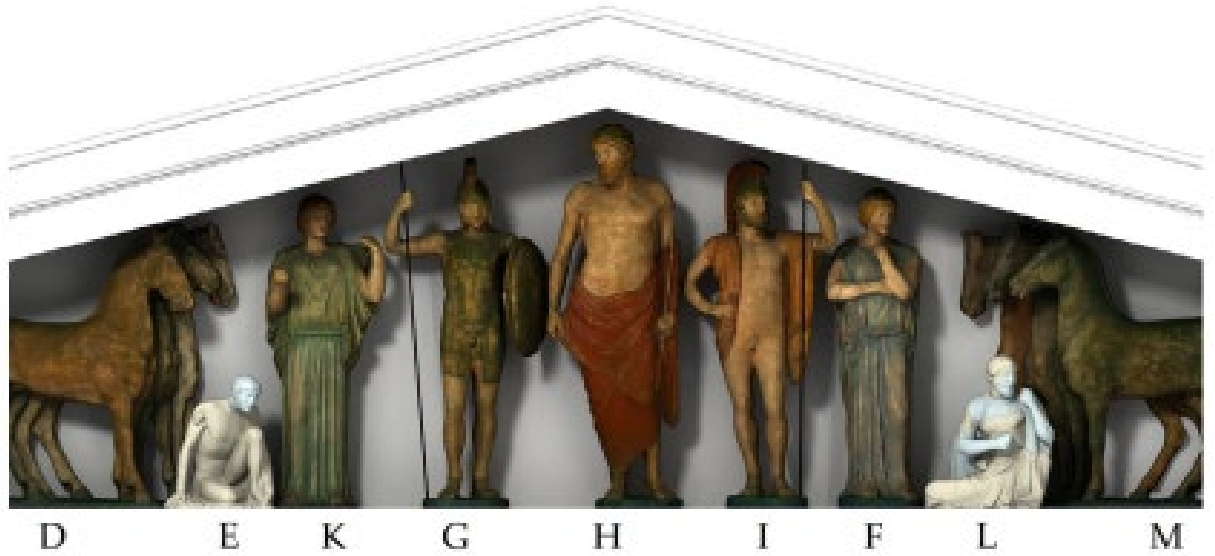


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