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Synthesis of Art in Greek and Turkish Cultures: A Comparative Analysis of Mycenaean and Tile Art

Yunan ve Türk Kültürlerinde Sanatın Sentezi: Miken ve Çini Sanatının Karşılaştırmalı Analizi

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Abstract

This study examines Mycenaean and tile art from a comparative perspective, exploring the cultural, aesthetic, and functional features of both artistic forms. While Mycenaean art holds a significant place in the Late Bronze Age Aegean with its geometric abstractions and masculine architectural designs. Tile art emerges as an expression deeply rooted in Anatolia's rich cultural heritage, blending religious and aesthetic elements. The shared characteristics of Mycenaean and tile art, such as the use of ceramics, symbolism, and functionality, are highlighted, while their differences are analyzed within historical and geographical contexts. The historical interaction between art, technology, and culture is further enriched by the opportunities provided by today's digital technologies. Artificial intelligence technologies like Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) play a transformative role in analyzing and reproducing these traditional art forms. In this context, the similarities and differences between the two arts were revealed using a Venn diagram based on the parameters of material, aesthetic, and religious influence. This study discusses how digital technologies contribute to the understanding of traditional art forms and shape modern artistic approaches. The findings present an innovative perspective that bridges the artistic expressions of the past and the future.

Öz

Bu çalışma, Miken ve Çini sanatlarını karşılaştırmalı bir perspektifle ele alarak, her iki sanat biçiminin kültürel, estetik ve işlevsel özelliklerini incelemektedir. Miken sanatı, geometrik düzenlemelere dayalı soyut estetiği ve maskülen mimarisiyle Ege Geç Tunç Çağı'nda önemli bir yer tutarken, Çini sanatı Anadolu'nun zengin kültürel mirasından etkilenerek daha çok dinî ve estetik unsurları bir araya getiren bir ifade biçimi sunmuştur. Çalışmada, Miken ve Çini sanatlarının ortak paydaları arasında seramik kullanımı, sembolizm ve işlevsellik ön plana çıkarılmış, ayrıştıkları noktalar ise tarihî ve coğrafi bağlamlar çerçevesinde analiz edilmiştir. Sanatın tarihsel bağlamda teknoloji ve kültürle olan etkileşimi, günümüz dijital teknolojilerinin sunduğu olanaklarla daha kapsamlı bir şekilde değerlendirilmektedir. Generative Adversarial Networks (GANs) ve Variational Autoencoders (VAEs) gibi yapay zekâ teknolojileri, bu geleneksel sanat biçimlerinin hem analizinde hem de yeniden üretiminde etkili bir rol oynamaktadır. Bu bağlamda, Venn diyagramı kullanılarak her iki sanatın benzerlik ve farklılıkları materyal, estetik ve dinî etki parametreleri baz alınarak ortaya konulmuştur. Çalışma, dijital teknolojilerin geleneksel sanat formlarının anlaşılmasına ve modern sanatsal yaklaşımların şekillenmesine nasıl katkıda bulunduğunu tartışmaktadır. Elde edilen bulgular, geçmiş ve geleceğin sanatsal ifade biçimlerini birleştiren yenilikçi bir yaklaşım sunmaktadır.

Keywords Mycenaean Art · Tile Art · Venn Diagram · Artificial Intelligence

Anahtar Kelimeler Miken Sanatı · Çini Sanatı · Venn Diyagramı · Yapay Zeka

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Introduction

Throughout history, art has been shaped by the development of technology and has undergone continuous transformation. When the first people drew pictures on cave walls, this act was a process of creation as well as a means of communication. Over time, painting, sculpture, ceramics, tiles and many other branches of art have evolved under the influence of both aesthetic understandings and technical innovations. In particular, the industrial revolution has transformed art production processes, making it possible to reach wider audiences, and in the modern era, digital technologies have further accelerated this transformation. Today, artificial intelligence appears as the latest evolution of art, offering a paradigm that questions and redefines the nature of creative processes.

It is a fact that art has been shaped by both aesthetic and technological developments throughout history. From the Late Bronze Age of the Aegean, which bears the traces of Mycenaean and Minoan cultures, to the elegant tile works of the Ottoman period, art has been evaluated through its own technology and aesthetic understanding. While the regular geometric patterns and symmetrical arrangements of Mycenaean ceramics reflect the cultural and aesthetic understanding of an era, the elegance in color, pattern, and detail in Ottoman tiles reveals the power of art in creating identity. These works have an important place not only in terms of aesthetics but also in terms of identity, belonging and historical consciousness.

From the use of ceramic art as a means of communication in Mycenaean and Minoan cultures to the Ottomans' use of tile art in spatial aesthetics, art has always had the power to create identity and belonging. Artificial intelligence takes this heritage to a new dimension and offers the opportunity to reinterpret art in the digital world. Today, creative processes are not only based on individual skills but also combined with an aesthetic understanding based on data analysis, algorithms, and digital manipulations.

Artificial intelligence technologies create new possibilities in art production. While the visual arts have traditionally been associated with individual creativity and manual dexterity, we are now in an era where algorithms and codes have become artistic tools. As creative works realized in the digital environment provide artists with access to a large pool of data, they also reveal artificial intelligence systems that can learn from this data and continue creative processes independently. For example, algorithms like Generative Adversarial Networks (GANs) have the capacity to produce autonomous and original artworks based on learned patterns. This has the effect of going beyond the traditional forms of artistic expression, changing both the aesthetic understanding and the definition of the creative process.

This transformative role of artificial intelligence in art production is considered not only a technical innovation but also a philosophical and social transformation. Artists now need not only manual skills but also the ability to use digital software and algorithms effectively. This emerging process redefines the role of the individual in artistic creation, foregrounds the creative agency of artificial intelligence, and highlights the transformative influence of technology on aesthetic practices. The practice of copying the works of masters in the traditional understanding of art has gained a different dimension in the digital environment and this practice has been enriched with algorithmic processes created with codes. Thus, the creative process has been redefined within the framework of digital parameters.

When we look at the history of art, each new technology has affected both the modes of production and the methods of presentation in art. This transformation started with photography and cinema technologies and accelerated with the emergence of computer graphics and digital art. Today, artificial intelligence is the last link in this transformation, paving the way for different aesthetic dimensions and the methods of

presentation in art. Creativity is no longer considered an individual endeavor but a process that emerges through the collaboration of man and machine.

Artworks supported by artificial intelligence offer great diversity in terms of aesthetics and meaning, while also contributing to the democratization of art. These works, which can reach millions of people through digital platforms, expand the boundaries of cultural interactions. On the other hand, the role of these new tools in the creative process raises the question of their impact on individual identity and the authenticity of art. Today, the criteria that determine the aesthetic value of a work of art are shaped by traditional norms as well as the possibilities offered by artificial intelligence.

1. Methods

This study aims to combine Greek Mycenaean art and Turkish tile art through artificial intelligence. The research consists of two main stages: theoretical investigation and applied analysis. In the first stage, the cultural and aesthetic foundations of Mycenaean and tile arts will be examined through a literature review; the historical background, symbolism, and aesthetic values of both art forms will be discussed. In this context, the cultural dimensions of tile art and Mycenaean art will be examined using a Venn diagram as a visual comparison and analysis method. The Venn diagram is intended to reveal the common and different aspects of both art forms by visualizing them in a systematic way. In particular, the core values shared by these arts will be located at the intersection of the Venn diagram. In addition, the distinctive characteristics of both arts will be presented in detail in the diverging sections of the diagram. In this way, it will clarify how Mycenaean and tile arts can interact with each other culturally and aesthetically.

In the second phase of the research, an applied design process will be carried out in which both art forms are brought together by utilizing the analytical and creative potentials of artificial intelligence technology. In this phase, new visual designs will be produced by combining Mycenaean ceramic motifs and Turkish tile patterns through artificial intelligence algorithms. These designs aim to build a bridge between the past and the present, combining the aesthetic and cultural heritage of both art forms with a contemporary interpretation.

As a result, the research process aims to create a new form of artistic expression by combining theoretical and practical approaches, and integrating the cultural and aesthetic values of Greek Mycenaean art and Turkish tile art. This method offers a unique perspective on how past artistic traditions can be reinterpreted with contemporary technologies.

2. Cultural and Aesthetic Foundations of Mycenaean and Tile Art

2.1. The Mycenaean Art

During the period when the Minoan civilization was in its heyday in Crete, Mycenaean art began to emerge on the Greek peninsula. Mycenaean art developed on a cultural foundation based on local traditions. Mycenaean ceramic surfaces are characterized by geometric compositions organized into segmented bands. The motifs are arranged symmetrically around the vessels. This style of decoration reflects a different approach from the characteristic features of the Minoan culture. In time, as Mycenaean leaders conquered Crete, the effects of the Minoan artistic style called “Palace Style” were observed in Mycenaean artifacts. However, these influences remained at a superficial level and no in-depth harmony was achieved. Mycenaean art is generally characterized by a regular and abstract structure. This mathematical aesthetic understanding also manifested itself in architecture, and a strong, masculine expression emerged in their buildings.

Mycenaean art reflected the aesthetic understanding of a warrior and conquering society, and revealed the creative spirit of the Achaeans.[1] With the decline of the Minoan civilization, the cultural heritage of Crete gave way to a new era. The Mycenaeans, although influenced by Crete, developed an understanding of art that reflected their own warrior society. This transition, while bearing the traces of Minoan art, took on a different character with the Mycenaeans' harsher and more military-oriented aesthetics. Approaching 1400 BC, the Minoan civilization disappeared from history in a great destruction. During this period, the Achaeans (Mycenaeans) emerged on the stage of history and began a period of sovereignty on the Greek mainland and the surrounding islands that lasted for nearly three centuries.[2] The end of the Minoan civilization brought about a major cultural change in the Aegean region. The rise of the Achaeans led to the emergence of new artistic concepts, and this process paved the way for the development of Mycenaean ceramics with unique forms and patterns, as seen in Figure 1.

Figure 1
Example of Mycenaean art.[3]

Mycenaean ceramics were widely used in central and southern Greece during the Aegean Late Bronze Age (probably starting around 1650 BC or 1550 BC and lasting until 1050/1000 BC), representing the unique pottery tradition of the region. These ceramics are among the most important examples reflecting the cultural and aesthetic characteristics of the period.[4]

Figure 2
Mycenaean Pottery Sample.[5]

[1] Adnan Turani, *Dünya Sanat Tarihi* (İstanbul: Remzi Kitabevi, 1992), 13.

[2] Arif Müfid Mansel, *Ege ve Yunan Tarihi* (Ankara: Türk Tarih Kurumu, 1995), 58.

[3] Emily Townsend Vermeule. "Mythology in Mycenaean Art", *The Classical Journal*, 54/3 (1958): 102.

[4] Jeremy B. Rutter. "Mycenaean pottery". *The Oxford Handbook of the Bronze Age Aegean* in, ed. E. H. Cline (Oxford University Press, 2010), 415.

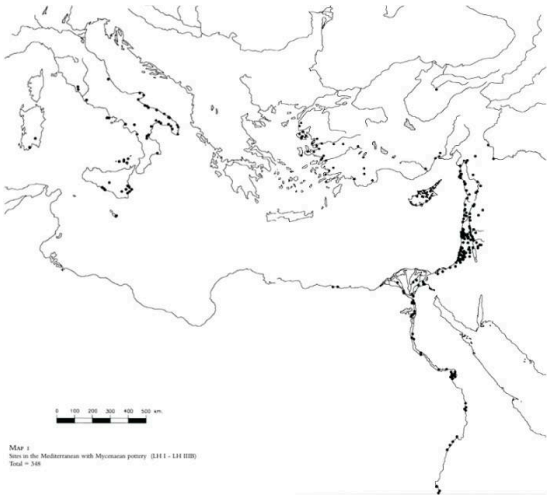
[5] Bartłomiej Lis vd., "Investigating pottery production and consumption patterns at the Late Mycenaean cemetery of Perati", *Journal of Archaeological Science: Reports*, *32*/102453 (2020): 2.

Archaeological studies in Anatolia show that the most important findings of the Mycenaean-Akhaic civilization were mostly found in settlements on the coast of western Anatolia. In the interior, this connection was more limited, but it seems to have been shaped by trade. Considering the Cretan-Minoan civilization's interest in maritime trade, Greece also established economic ties primarily with the western Anatolian coast from the 16th century onwards. However, the excavations and studies carried out since the 1960s have expanded Anatolia–Greece relations beyond purely economic dimensions.[6] The economic ties that Greece established with Western Anatolia were shaped especially through maritime trade. These commercial relations developed thanks to the strategic location of the region and the effective use of sea routes, while the geographical structure of Greece further strengthened these connections. Greece is a peninsula bordered by the Balkans to the north and surrounded by sea on three sides. The Ionian Sea lies to the west, the Aegean Sea to the east, and the Mediterranean Sea to the south. The country is largely mountainous, with the main high mountains being the Pindos Mountains (from north to south), Mount Parnassos in the south, and Mount Olympus near the east coast of central Greece. Macedonia is a region in the northeast of Greece.[7] The geographical structure of Greece facilitated the spread of the Mycenaean civilization in this region surrounded by the sea. The regions where Mycenaean ceramics have been found reveal the extent of the trade and cultural interaction that this civilization carried out by sea. Figure 3 shows in detail the regions where Mycenaean pottery was found. These artifacts have been discovered within the borders of at least fourteen different modern nation-states. This spatial distribution clearly reveals that the finds belonging to the Mycenaean culture were distributed across a vast geographical area, and that the effects of the Mycenaean civilization were felt in a very wide area.

The regions where Mycenaean ceramics are found constitute an important map that both bears traces of cultural interactions and reflects the trade and migration routes of the ancient civilization[8] The widespread influence of the Mycenaean civilization was not limited to Greece and the surrounding islands, but also reached Anatolia. The original ceramic artifacts of the Hittites were imported into Mycenaean culture, further reinforcing this interaction.

Figure 3

Regions where Mycenaean art spread.[9]



[6] Coşkun Özgünel, "Batı Anadolu ve İçerlerinde Miken Etkinlikleri" *Belleten,* 47/187 (1983): 698.

[7] Oğuz Tekin, *Eski Yunan Tarihi* (İstanbul: İletişim Yayınları, 1995), 14.

[8] Gert Jan Van Wijngaarden, *Use and Appreciation of Mycenaean Pottery in the Levant, Cyprus and Italy:(ca. 1600-1200 BC)* (Amsterdam: Amsterdam University Press, 2002), 55.

[9] Van Wijngaarden, *Use and Appreciation of Mycenaean Pottery in the Levant, Cyprus and Italy:(ca. 1600-1200 BC)*, 302-303.

The Hittites, who lived in Anatolia, produced very colorful and original works in ceramic art. Among these artifacts, snail and boot-shaped drinking vessels are particularly noteworthy. Excavations in Mycenae reveal that such ceramics were imported from Anatolia into the region. This indicates that Hittite artistic production was both local and extended to distant regions through trade. Hittite ceramics play an important role both in terms of aesthetics and cultural interaction.[10] The spread of Mycenaean pottery is related not only to trade but also to migrations. The migration of Mycenaean settlers to Cilicia in southern Anatolia around 1200 BC increased the presence of these ceramics in the region.[11] The cultural heritage left by the Mycenaean settlers in Cilicia contributed significantly to the region's artistic and craft traditions. Such cultural interactions also influenced the development of arts and crafts in other parts of Anatolia. Especially in ceramic and tile art, the aesthetic sensibilities of different cultures blended into a unique form of expression. Within the rich historical texture of Anatolia, tile art has emerged as one of the most striking examples of this combination. This art serves as both a functional ornamentation technique and a means of expression that reflects the aesthetic and cultural identity of the region.

2.2. Tile Art

Turkish tile art stands out as a globally recognized art form, with origins dating back to the Uighurs and preserved in significant works from the Seljuk and Ottoman periods that have survived to the present day. This discipline, which has an important position in traditional arts, and has remained a source of cultural and aesthetic inspiration in the historical process. The term "tile" etymologically means "belonging to China." The admiration for the aesthetic value of Chinese porcelain, which reached the Ottoman palace in the late 15th and 16th centuries through various means, led to the use of this term and its gradual introduction into the literature.[12] Although ceramics and tile are produced from the same material in terms of their basic properties, they are handled in different categories in line with scientific and academic concerns. The widespread use of ceramic vessels throughout history allowed them to reflect cultural heritage. Glazed or unglazed utensils are referred to as ceramics, while plates based on the same production principles but used for wall cladding are called tiles. This distinction serves to clarify classification. During the Ottoman period, the term "çini" became widespread, and ceramic and çini masters introduced terms such as "wall tile" and "çini plate" into Turkish literature.[13] Today, the definitions and terminology between ceramics and tiles reveal that the production processes and shaping stages of contemporary and traditional Turkish ceramics are fundamentally similar. Although they are largely similar in terms of production processes and shaping techniques, there are differences in the types of clay used, the types of glazes and paints, and the degree of firing. Despite this, both approaches seem to belong to the same material family. According to Kacar, the term "Traditional Turkish Ceramics," although not widely used in today's fine arts education, refers to the traditional form of production generally referred to as tile in the literature. He argues that it would be a more appropriate approach to define the term "tile," commonly used in the literature, as Traditional Turkish Ceramics and to express it as "Traditional Turkish Ceramics (tile)" in parentheses.[14] Although ceramics first emerged to meet basic human needs, it has evolved into a unique form of art and expression through cultural development over time.[15] This art, which began to take shape as soon as the Turks entered Anatolia, evolved

[10] Turani, Dünya Sanat Tarihi, 115.

[11] E. Susan Sherratt and Joost H. Crouwel. "Mycenaean pottery from Cilicia in Oxford" *Oxford Journal of Archaeology*, 6/3 (1987): 325.

[12] Vedat Kacar, "Cumhuriyet'in 100. Yılında Türk Çini Sanatı", *Yedi: Sanat, Tasarım ve Bilim Dergisi*, (Özel Sayı) (2023): 32.

[13] Gönül Öney, "Anadolu Selçuklu Çini ve Seramik Sanatı" in *Osmanlıda Çini ve Seramik Öyküsü*, ed. Ara Altun (İstanbul: Creative Yayıncılık ve Tanıtım Ltd, 2000), 11-14.

[14] Kacar. "Cumhuriyet'in 100. Yılında Türk Çini Sanatı", 32.

[15] Can Gökçe ve Emre Feyzoğlu, "A General Overview of Portrait Works on Ceramic Surfaces", *The Turkish Online Journal of Design Art and Communication,* 14/3 (2024): 765.

and developed into a unique ceramic culture that has survived to the present day. This cultural synthesis created by the Turks in the art of ceramics was not limited to the Ottoman period; it also established a strong connection with Anatolia's rich ceramic heritage, which has been shaped since prehistoric times. In this context, early ceramic examples found in archaeological sites such as Boncuklu Höyük illuminate the origins of ceramic art in Anatolia and shed light on the thousands of years of history of this tradition. This continuity has enabled traditional Turkish ceramic art to become a universal art form by creating a cultural bridge from the past to the present. The baked clay remains from Boncuklu Höyük in Turkey are dated to the late 9th millennium BC and early 8th millennium BC. Although this period belongs to a time considered to be pre-ceramic, these remains suggest the early development of simple vessels.[16] These finds provide important clues about the early stages of ceramic production and illuminate the historical development of ceramic art. These simple forms evolved over time and became not only functional, but also a means of cultural and artistic expression.

The development of traditional ceramic art was influenced by the socio-economic conditions of each period and by aesthetic and philosophical foundations derived from Islamic thought. Anatolia, as a region where different civilizations converged, has developed a rich cultural heritage. This cultural richness has filled the region with artisanal treasures and made Anatolia a center of handicrafts and culture. Furthermore, Anatolia's strategic geographical position as a bridge between Asia and Europe, situated on key migration and trade routes, further increased the cultural and artistic importance of the region. These factors have allowed traditional ceramic art to diversify and become more refined. The contributions of the first generation of ceramic artists are of great importance in the development of modern ceramic art.[17] These artists were influenced by the rich cultural heritage of Anatolia and reflected this heritage in their artistic production. Early ceramic vessels and objects still exist today, preserving their traditional shapes and functions.[18]

The Turks' acceptance of Islam and transition to settled life paved the way for significant advances in the art of ceramics. Alongside their conquest of Anatolia, they blended the 8,000-year-old ceramic tradition in these lands with their own understanding of art and gave it a new dimension. Through this cultural fusion, Kütahya and Çanakkale became important centers of ceramic production. Çanakkale ceramics were notable for their animal-shaped vessels and decorative tiles, and Iznik, meanwhile, marked the peak of ceramic art the Ottoman period.[19] Iznik stands out as a center that left its mark on Ottoman ceramic art with its technical features and aesthetic understanding. The use and display of Iznik tiles in buildings such as palaces, inns, and baths in Istanbul is an indication that these valuable artifacts were taken under protection. These spaces allowed the tiles to be safely preserved, making it easier to trace and identify the historical traces of these tiles today. The production of tiles in Kütahya, on the other hand, remained mostly local, which made the preservation of Kütahya tiles, which were used for both architectural and artistic purposes, more difficult than that of Iznik tiles. On the other hand, the transfer of Iznik tiles to Istanbul created opportunities for their international recognition and drew the attention of foreign visitors to these works of art.[20] Thus, Iznik became recognized worldwide and symbolized a unique technical innovation in Turkish ceramic art.[21] The worldwide fame of Iznik ceramics reflects the technical and aesthetic peak of Turkish ceramic art. The

[16] Alexandra Fletcher vd., "Early Ceramics in Anatolia: Implications for the Production and Use of the Earliest Pottery. The Evidence from Boncuklu Höyük", *Archaeological Journal,* 27/2 (2017): 351.

[17] Mücella Kahveci, "21. Yüzyıla Girerken Geleneksel Türk Sanatları", *Folkloristik: Prof. Dr. Dursun Yıldırım Armağanı,* (Ankara: Turkiye Diyanet Vakfi Matbaası, 1998): 387.

[18] Seyhan Yılmaz, "Traditional Objects That Sources to Contemporary Turkish Ceramic Art", *Art-Sanat Dergisi,* 0/13 (2020): 418.

[19] Deniz Onur Erman, "Türk Seramik Sanatının Gelişimi: Toprağın Ateşle Dansı", *Acta Turcica,* 4/1 (2012): 18.

[20] Seçil Satır, "A Current Evaluation of Traditional Iznik Tiles and Ceramics", *Design Discourse,* 2/3 (2007): 11.

[21] Ezgi Gökçe, "Iznik Ceramics: History And Present-Day", *Athens Journal of Humanities & Arts,* 5/2 (2018): 225.

influence of this tradition had a lasting impact not only historically but also on modern ceramic artists, and the cultural heritage of Anatolia has been a source of inspiration for contemporary artists. Among the motifs commonly used in Ottoman period tiles, tulips, fish, and ship figures stand out. These symbols are largely unique to Ottoman culture, with floral patterns particularly prominent in mosque interior decorations. These patterns, which sometimes repeated and sometimes complemented one another, were arranged in panels and decorated the walls of buildings such as inns, baths, and palaces. The most commonly used tile colors were blue, white, and red tones.[22]

Figure 4
İznik tile plate, Victoria & Albert Museum.[23]

An Iznik tile plate decorated with red carnations and green cypress trees is a remarkable example reflecting the aesthetic and symbolic richness of Ottoman tile art (see Figure 4). The carnation motifs on the plate, which were produced between 1600-1650, stand out as a symbol of emotions such as elegance and love in Ottoman tile art. The red color used signifies vitality and energy. The contrast of red and green is a common aesthetic approach in Iznik tiles. The vibrant red tones and natural green create both a visual balance and a remarkable dynamism.

The Iznik tile onion-shaped vase decorated with tulips and carnations can be considered an important work of art that brings together the aesthetic understanding and technical mastery of Ottoman tile art (see Figure 5). The design of this vase, which was produced around 1575, is in harmony with its form. The tulips, carnations and other flowering plants on the vase follow the curved structure, giving the impression of swaying in a gentle breeze. The tulips on the vase have great religious and cultural significance in Ottoman art. As a motif symbolizing the unity of God, the tulip stands out as a symbol of elegance, beauty and purity in Ottoman aesthetics. The onion form of the vase is remarkable in terms of both functionality and aesthetics. This form reflects the elegance of the period, while also providing a symmetrical and balanced appearance. Produced in the 16th century, this piece also reflects the wealth of the Ottoman rulers and the importance they attached to sumptuous decorative arts. The bold designs of this period focused on plant

[22]Murat Bayazit ve İskender Işık, "Geçmişten Günümüze Çini Sanatı ve Kütahya Çiniciliği", *Batman Üniversitesi Yaşam Bilimleri Dergisi*, 1/1 (2012): 894.

[23]"Victoria and Albert Museum (V&A)," Plate, Fritware Decorated With Red Carnations and Green Cypress Trees; Turkey, 1600 to 1650, access November of 28, 2024, https://collections.vam.ac.uk/item/O114554/plate/.

and floral-based patterns, generally avoiding human or animal figures. This choice was made deliberately to distinguish Ottoman art from that produced in Iran during the same period.

Figure 5

Iznik tile vase, Victoria & Albert Museum.[24]

3. On the Use of Artificial Intelligence in Artwork Creation

According to Postman[25], after the invention of the digital computer, it was obvious that the computer could perform functions that could in some sense be called "intelligent." In 1936, the great British mathematician Alan Turing showed that for many practical purposes it was possible to build a machine that would behave like a human problem solver. The thinker claimed that a machine could be called "intelligent" if a computer could exchange thoughts with a human being through typed messages, that is, if it could take its side of a conversation. From today's perspective, it seems possible to say that the predictions are consistent. Because art, which is expressed as a creative field, has integrated new perspectives based on algorithms into new ways of thinking.

Throughout history, the evolution of art alongside technological innovation has led to the emergence of new form of expressions. The visual arts, which have reached large audiences through traditional forms of expression such as painting, sculpture, and printing, have evolved into new dimensions with the advent of photography and film technologies. With the emergence of computer-based graphic narratives, this evolution has paved the way for an era known as "digital art." Today, artificial intelligence technologies represent the latest stage in this historical progress.

If we look at the brief history of artificial intelligence in its developmental stage, we can see that the initial era, from the mid to late 20th century, was characterized by systems, without self-awareness or intelligence, capable only of solving specific problem sets. During this period, computers were extremely fast in their calculations and had the ability to solve specific problems, such as calculating complex mathematical

[24] "Victoria and Albert Museum (V&A)," Bulbous vase decorated with tulips and carnations, Turkey (probably Iznik), ca. 1575, access December of 2, 2024, https://collections.vam.ac.uk/item/O86656/vase-unknown/.

[25] Neil Postman, *Technopoly: The Surrender of Culture to Technology* (New York: Vintage Books, 1993), 110.

equations or performing astronomical computations. The first generation of AI was based on binary logic, where information was either true or false. Since at the time there was no way to tell the computer what the correct answer was, the computer had to calculate all possible options before guessing the correct answer. Because of this limitation, the first generation of AI could perform only one task at a time, as it was incapable of making multiple decisions simultaneously. With the introduction of general AI, where machines can understand the world around them and manipulate it to achieve specific goals, in the late 1980s and early 1990s, researchers introduced the world to the concept of 'machine learning', which means that machines can analyze and learn from large amounts of data to improve their performance on a variety of different tasks. In the mid-20th century into the new millennium, the capabilities of artificial intelligence have been greatly improved. The increase in processing power, combined with the use of deep learning methods, has made it possible for machines to perform a wide range of complex tasks using visual, auditory and other sensory inputs.[26]

It is important to consider that all creative work in media and design today takes place in a digital environment. Creatives have instant access to a vast amount of work done by others through social media and specialized sites for sharing art, photos, videos, and music. This paves the way for thinking in a broader framework, with code written to make interactive, generative or animated works. Both students and professionals are often able to transform the same artwork in the digital environment by copying someone else's computer code and then modifying it. On the other hand, while traditional arts and crafts education was based on copying the work of other masters, digital media has qualitatively changed this practice. It externalizes one's thinking and creative process and transforms it into a series of discrete operations with numerical parameters defining their details.[27]

Owing to advancements in technology, art is now regarded as an expression, a collaborative endeavor, and a tangible outcome. This enables art to go beyond traditional understandings of art and make it accessible to everyone. Although the creation of art has been a human activity for thousands of years, new technologies now make it possible for people to create art using digital devices.[28] Artificial intelligence redefines art not only as a means of production but also as an active participant in the artist's creative process. In defining artificial intelligence, Zhang and Lu refer to it as the development of computer systems that can perform tasks that usually require human intelligence. Artificial intelligence, which can consist of both hardware and software, can be used for a wide range of applications, including cars, telephones, household appliances and smart robots.[29] Machine learning is a subset of artificial intelligence that encompasses all techniques that enable computers to mimic human intelligence, from rule-based systems to advanced neural networks.

Machine learning (ML), a subset of AI, focuses on systems that learn from data to improve performance without explicit programming. Instead of following fixed rules, ML systems learn patterns and make predictions or decisions based on data. In machine learning, algorithms use data to train models that can make predictions or classifications when faced with new inputs. Machine learning is divided into three subtopics: supervised learning, unsupervised learning, and reinforcement learning. In supervised learning, a computer is given a set of instructions on what to do to accomplish a task. It is then trained on this data until it completes the task on its own. Unsupervised learning is the opposite; a computer is not given any instruc-

[26] Mina Dawood and Mayssa Elfa. " Using Artificial Intelligence for enhancing Human Creativity", *Journal of Art, Design and Music,* 2/2 (2023): 108.

[27] Lev Manovich and Emanuele Arielli, "Artificial Aesthetics: Generative AI, Art and Visual Media" access December of 10, 2024, https://manovich.net/index.php/projects/artificial-aesthetics.

[28] Dawood and Elfa, "Using Artificial Intelligence for enhancing Human Creativity", 106.

[29] Dawood and Elfa, 107.

tions on what to do but learns from the data given to it by the programmer. Using the information it receives, it makes its own decisions and generates creative solutions based on the available data. Reinforcement learning also focuses on learning interactively with the environment.[30]

The use of artificial intelligence in the process of creating visual art has accelerated significantly with the emergence of Generative Adversarial Networks.[31] Artificial intelligence, which has become a transformative force in the art world, changing traditional techniques and creating a new wave of creativity, includes Generative Adversarial Networks as well as generative art in which algorithms such as Variational Autoencoders autonomously produce original artworks based on learned patterns.[32] Generative AI art refers to the process of creating visual artworks using artificial intelligence and machine learning algorithms. These algorithms learn patterns, styles and visual elements found in man-made art, often by training on large datasets of images from the internet.[33] Generative platforms such as DALL-E, Midjourney and Leonardo.AI allow users to produce images, animations, and designs through text commands. These technological advances unwrap access to the process of artistic creation to a wider audience, allowing artists, designers, and ordinary users to explore their creative potential, which was previously limited by a lack of technical knowledge or resources.[34] The affordances of emerging technologies are reshaping the creative process and fostering new avenues of discourse within the realm of contemporary art. The role of artificial intelligence in art production is reshaping the meaning of art and its production processes. This suggests that we are on the threshold of a new era in art and design, where the use of artificial intelligence and machine learning technologies is transforming the creative field.[35] Arielli[36] emphasizes how our interaction with technology creates and ultimately shapes our cultural evolution. This interaction raises the question of whether it has the potential to push the boundaries of our understanding of cultural and artistic heritage. In a futuristic scenario, he argues that machines could gain a precise understanding of human aesthetic preferences and could ultimately influence the perception of aesthetic objects with greater precision than human inference. Machines can learn to produce aesthetic artifacts and generate new creative styles and genres. It may even have the potential to create new 'cultures' by analyzing the diversity of human aesthetics. However, the future of AI-based art production seems both exciting and complex. These technologies promise to expand human creativity, democratize art creation, and offer new forms and experiences, while requiring careful consideration of ethical, legal, and cultural implications. As AI continues to evolve, it will undoubtedly reshape the art world in profound and unpredictable ways, rethinking notions of creativity, authorship, and the very essence of creating and appreciating art.[37]

[30] Dawood and Elfa, 107.

[31] Eva Cetinic and James She, "Understanding and Creating Art with AI: Review and Outlook" (2021): 1-17.

[32] Tanish M Sanghvi vd., "Brushstrokes of Tomorrow: Exploring the Art of AI", *International Journal of Scientific Research in Science Engineering and Technology,*11/3 (2024): 357.

[33] James Hutson vd., *Creative Convergence the AI Renaissance in Art and Design* (New York: Springer, 2024), 1-2.

[34] Nagapushpa B. M. vd., "Revolutionizing Art and Design through AI: Balancing Innovation, Ethics, and Future Preparedness", *International Journal of Scientific Research in Engineering and Management,* 8/11 (2024): 1.

[35] Hutson vd., *Creative Convergence the AI Renaissance in Art and Design,*1.

[36] Manovich and Arielli, "Artificial Aesthetics: Generative AI, Art and Visual Media".

[37] Tanish M Sanghvi vd., "Brushstrokes of Tomorrow: Exploring the Art of AI", 361.

4. Results

4.1. Cultural Dimensions of Tile and Mycenaean Art: A Comparative Venn Diagram

A Venn diagram was used to visually reveal the similarities and differences between tile art and Mycenaean art. This diagram contributed to a clearer understanding of the cultural dimensions of the two artistic traditions by clearly showing their commonalities and differences.

The term Venn Diagram is used to refer to a broader type of set diagram, including earlier Euler diagrams that do not include unshaded sets and Ballantyne diagrams that describe the number of elements in each set.[38] The Venn Diagram is a visual tool used in set theory and logic. These diagrams use circles or round shapes to show the intersections and relationships of sets. The different types of diagrams are mentioned as follows:

- **Euler Diagrams:** Euler diagrams form the basis of various diagrammatic notations used to represent set-theoretic relations and are used in many different contexts, such as file systems, statistical data representation, object-oriented modeling, logical systems, and database queries. An abstract Euler diagram is a formal abstract representation of a given piece of information, and we say that it is drawable when it satisfies the visual properties required for it to be visualized.[39]
- **Ballantyne Diagrams:** Ballantyne diagrams are diagrams that visually show the number of elements in clusters and the relationships between clusters. These diagrams numerically express the number of items in each cluster and the overlaps between clusters. As an alternative to the statistical summary, the visuals representing the variance of each variable are represented by circles and the overlap between two circles represents the shared variance. In the case of three variables, the resulting figure is called a Ballantyne diagram.[40]
- **Venn Diagrams:** Venn diagrams are a special version of this type of diagram. In Venn diagrams, each cluster is represented by circles and these circles can intersect each other. The intersecting regions show the common elements between clusters, while the whole of each circle represents all the elements within the cluster. These diagrams are particularly helpful for visually understanding the relationships, intersections, combinations, and differences between clusters.[41]

A Venn diagram was used to make the relationships between clusters more explicit. The Venn diagram allows each cluster to be represented by circles and the intersecting areas of these circles visualize the common elements between clusters. This method is a particularly effective tool for analyzing interactions, combinations, and differences between clusters. The Venn diagram facilitates the reader's understanding of cluster relationships and provides important visual support for comparative analysis. In this way, the similarities and differences between the cultural dimensions of tile art and Mycenaean arts are more clearly revealed. Such diagrams help visualize the connections between clusters and elements.

In a Venn Diagram

- Left Half (Tile Art): The distinctive cultural and aesthetic characteristics of tile art are included.

  Materials: Porcelain, ceramic, glass.

  Figures: Geometric patterns, floral motifs.

[38] Robert L. Harris, *Information graphics: a comprehensive illustrated reference: Atlanta* (New York: Oxford University Press, 1999), 26-27.

[39] Jean Flower vd., "Euler Diagram Generation", *Journal of Visual Languages & Computing*, 19/6 (2008): 675.

[40] Earl Hunt, "The Design Of Ballantines. Behavior Research Methods" *Instruments, & Computers*, 18/3 (1986): 280.

[41] Amirouche Moktefi vd., "On the Origin Of Venn Diagrams" *Axiomathes*, 32/3 (2022): 888.

Cultural Context: Islamic culture, palaces, mosques.

Religious Influence: Islamic symbolism, geometric aesthetics.

- Right Half (Mycenaean Art): Cultural and aesthetic characteristics of Mycenaean art.

  Materials: Ceramics, gold, bronze.

  Figures: Gods, heroes, warriors.

  Cultural Contexts: Greek mythology, aristocracy, royal courts.

  Religious Influence: Worship of gods and heroes.

- Middle Section (Emerging Commonalities):

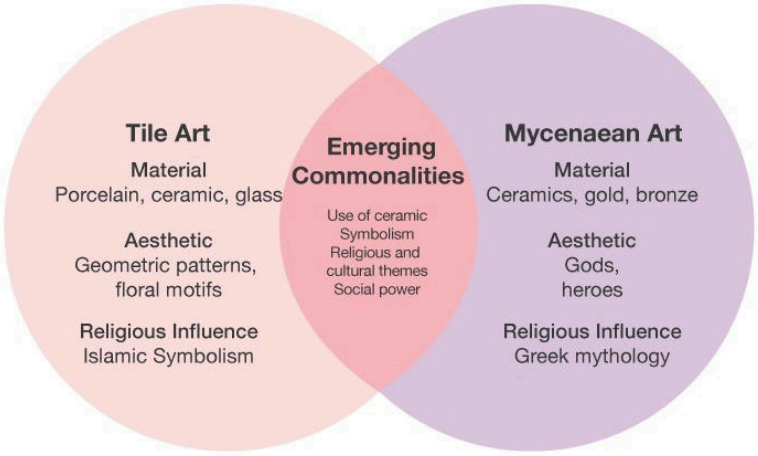
  Materials: Use of ceramics.

  Aesthetic: Symbolism, religious and cultural themes.

  Social Reflection of Art: Both arts reflect the power of social classes and religious beliefs.

Figure 6

Comparative venn diagram of tile and Mycenaean art (Authors)



The Venn diagram, which compares the cultural dimensions of tile and Mycenaean art, presents the unique characteristics and common points of both artistic traditions visually. The left section of the diagram shows the unique materials, aesthetic elements and religious influences of tile art, while the right section shows the characteristic features of Mycenaean art. The common section emphasizes the shared elements of both arts, such as the use of ceramics, symbolism and religious themes.

4.2. Cultural and Aesthetic Coexistence: Reconstruction of Mycenaean and Tile Arts with Artificial Intelligence

Indicator 1: The Analyze of the Combination of Traditional Motifs of Turkish Tile Art and Greek Mycenaean Art[42]

Prompt: "Create an image that blends traditional Turkish tile art with Greek Mycenaean art. The image should combine the intricate geometric patterns from Turkish ceramics, the iconic motifs, and vibrant colors typical of Turkish tiles with the detailed, symmetrical designs of Mycenaean pottery. Colors should be rich and earthy, using blues, reds and yellows for the Turkish effect and gold accents and strong contrasts for

[42] Figure 7.

the Mycenaean effect. The composition should evoke a sense of cultural harmony, seamlessly combining elements from both styles."

Figure 7
AI Combination of tile and Mycenaean art motifs

Indicating: The complex geometric patterns, floral motifs, and vibrant colors such as blue and red, typical of Turkish tile art, along with the symmetrical forms, spiral patterns, and gold accents of Greek Mycenaean art become apparent.

Commentary: This image represents a fusion of traditional Turkish tile art and Greek Mycenaean art. The intricate geometric motifs and vivid color schemes of Turkish tile art are seamlessly integrated with the precise and balanced compositions characteristic of Greek Mycenaean art. In the work, it is seen that circular black lines form layers.

The black line on the image is an overglaze painting technique that emerged in Central Asia towards the end of the 14th century, where different colors were used together. This technique was also used in Anatolian tile art in the 15th and 16th centuries.[43] The prominent blue, red and yellow tones emphasize the energetic and dynamic nature of Turkish art, while the gold accents and contrasting details reflect the elegant aesthetics of Mycenaean art. The arrangement of the motifs creates a ground where the visual languages of both cultures find a common expression. The patterns are integrated with the simple and symmetrical form of Mycenaean pottery, creating a bridge between traditional and contemporary approaches. The fine workmanship on the ground shows how delicately the design concepts of both cultures were handled. As a result, this work creates a cultural harmony by combining the vibrant colors of Turkish tile art with the detailed patterns of Mycenaean art. With both its visual aesthetics and cultural depth, this work has succeeded in establishing a strong dialogue between the two artistic traditions.

Indicator 2: Natural Themes in Turkish Tile and Greek Mycenaean Art[44]

Prompt: "Create an image that showcases natural elements, combining Turkish tile art and Greek Mycenaean art. Focus on flora and fauna with Turkish tiles featuring stylized tulips, leaves and vines and Mycenaean art reflecting nature through organic forms. The colors should blend natural tones of green, earth

[43] Aneta Samkoff, "From Central Asia To Anatolia: The Transmission Of The Black-Line Technique And The Development Of Pre-Ottoman Tilework" *Anatolian Studies*, 64/2 (2014): 199.

[44] Figure 8.

and gold with delicate tulip details from Turkish ceramics and bold, strong animal motifs from Mycenaean art. The scene should represent a harmonious natural world where both art forms coexist."

Figure 8

Natural themes in Tile and Mycenaean art generated by AI

Indicating: Stylized floral motifs, tulip and carnation decorations, animal figures, dynamic patterns, pastel tones, and geometric forms.

Commentary: The image combines the finely crafted flora motifs of Turkish tile art with the powerful animal figures of Greek Mycenaean art in aesthetic harmony. The tulip seen in the work has played an important role in world art, especially Turkish art, for centuries.[45] While the stylized tulips and leaves typical of Turkish tiles reflect a detailed decorative approach through the theme of flora, the animal figure typical of Mycenaean art expresses a bold and symbolic approach to representing nature. The color palette used reveals the serenity and elegance of Turkish art with its earth tones and natural greens, and the splendor and richness of Mycenaean art with its golden details. This visual composition shows that an intercultural dialog through art is possible by bringing together the different aesthetic approaches of two different cultural traditions in depicting nature.

Indicator 3: Synthesis of Turkish Tile and Greek Mycenaean Art with Modern Interpretations[46]

Prompt: "Design a modern interpretation of the fusion between Turkish tile art and Greek Mycenaean art. The visual should include abstract versions of traditional motifs that combine the flowing curves and vibrant colors of Turkish tiles with the rigid, geometric designs of Mycenaean pottery. Use a contemporary, minimalist approach that focuses on the interplay of light and shadow. The artwork should feel like a bridge between the past and the present, combining the cultural heritage of both art forms into a coherent, futuristic design."

[45] Neda Darvishi and Sara Narimani, "The Symbolic Role of Tulip and Pomegranate Flowers in the Tiling Art of Iran and Ottoman Turkey" *Journal of Art & Civilization of the Orient,* 10/35 (2022): 25.

[46] Figure 9.

Figure 9
Synthesis of Tile and Mycenaean art generated by AI

Indicating: The image shows a soup bowl with rounded lines, a matching lid, a teacup, and the saucers belonging to these pieces. All pieces are designed in bright shades of orange and yellow and decorated with blue, green, and red patterns. Traditional motifs are repeated on the surface of both the bowl and the cup. The lid is designed in harmony with the bowl, complete with a central handle. In the background is a dinner plate in bright yellow tones. All the design elements show a harmony between contemporary and traditional aesthetics.

Commentary: This image offers a contemporary interpretation, combining the aesthetic elements of Turkish tile art and Greek Mycenaean art. This blending of traditional and modern elements demonstrates the potential of art as a bridge between historical processes. A striking feature at first glance is the vibrant color palette used extensively. Colors such as orange, yellow, blue, and green refer to both the elegant works of Ottoman tile art and the flat and rigid geometric motifs of the ceramics of the Mycenaean civilization. The dynamic use of these colors is combined with the abstracted forms of traditional motifs, offering the viewer an aesthetic experience that merges past and future.

Greek ceramics from the late 2nd millennium BC show a variety of curvilinear motifs, uniquely applied by hand.[47] The motifs and ornaments used in this study constitute the basic components of Greek and Turkish art. The spiral, circle and geometric patterns of Mycenaean art are combined with fluid and organic forms, maintaining a symmetrical and rigid structure while complementing the elegance and refinement of Ottoman art. The minimalist interpretation of form adds a contemporary touch to the work. Combining all elements in a balanced and simple design, this visual offers a deeper meaning beyond functional aesthetics. The play of light and shadow emphasizes the depth of the surface and the layered structure of time.

Conclusion

Throughout history, culture has been in a continuous process of interaction and transformation across different regions and societies. This dynamic process is also evident in the relationship between Mycenaean and tile arts. The social structure of the Mycenaean civilization, shaped in the Late Bronze Age of the Aegean, revealed a cultural texture nourished by a warrior identity and masculine values. This cultural structure manifested itself in art as an abstract aesthetic based on geometric arrangements and a strong architectural

[47] Antonis Kotsonas, "Ceramics, Ancient Greek", *Encyclopedia of Global Archaeology* (New York:2014): 1292.

understanding. On the other hand, tile art, which was shaped by the rich cultural heritage of Anatolia, religious beliefs and socio-economic conditions, developed a form of expression that gained a spiritual dimension. While these two different cultural structures reflect their social values and worldviews through their artistic productions, they also reveal the common aesthetic pursuits of humanity.

The use of ceramics and symbolism-based themes of both civilizations shows that their efforts to combine aesthetics and functionality are based on cultural origins. However, while the elaborate ornamentation in tile art was fed by the cultural atmosphere and religious influences of the period, the warrior identity of the Mycenaean civilization highlighted a strong and masculine character reflected in its architecture. These cultural dynamics form a foundation both for comprehending the aesthetic and social values of the past and for enabling their reinterpretation through contemporary technological practices. In this context, digital tools create new possibilities for the revitalization of traditional heritage in the modern world.

The innovations of the digital age have made the transmission and analysis of cultural heritage from the past to the present more accessible and visual. Artificial intelligence technologies offer powerful tools to make sense of the historical and social dimensions of culture, enabling the digital reinterpretation of traditional heritage. Technologies such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) have great potential to introduce the aesthetic and functional elements of deep-rooted cultural heritages such as Mycenaean and tile to wider audiences and ensure the sustainability of cultural values.

In this context, the comparative analysis of tile and Mycenaean cultures allows for a deeper understanding of not only the artistic but also the social and historical contexts. The aesthetic values of both cultures, nourished by the socio-economic conditions and religious influences of their respective periods, can be re-examined from a contemporary perspective thanks to digital technologies and can inspire modern cultural processes. Thus, the rich cultural fabric of the past shapes the creative potential of the future, building a dynamic bridge between the traditional and the modern.

As a result, in this study, Venn diagram analysis was applied to determine the intersection and divergence points of the cultural dimensions of Mycenaean and Turkish tile art. The Venn diagram created three separate sections representing both art forms and visualized the intersection and divergence points of these sections. Accordingly, three separate commands were given to artificial intelligence to create three different studies to represent each section of the diagram. In line with these commands, the AI generated the first, second and third visualizations respectively. Each visual study was evaluated by analyzing the content of the relevant command, the indicators produced by artificial intelligence, and the interpretation of these indicators. The findings were analyzed in relation to both the AI-generated outputs and the structure of the Venn diagram. The visual representations of cultural elements and the creative process of artificial intelligence were discussed in detail.

As a result of this process, it was revealed how the intersection and divergence points obtained from the Venn diagram can be expressed through visual art. The works produced with artificial intelligence enabled the reinterpretation of cultural interactions in the artistic dimension by visualizing the common features and differences of cultural elements specific to Mycenaean and Turkish tile art. In addition, the way artificial intelligence handles cultural representations in this process is analyzed from both a technological and artistic perspective, and important inferences are made on the potential of artificial intelligence in artistic production.

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