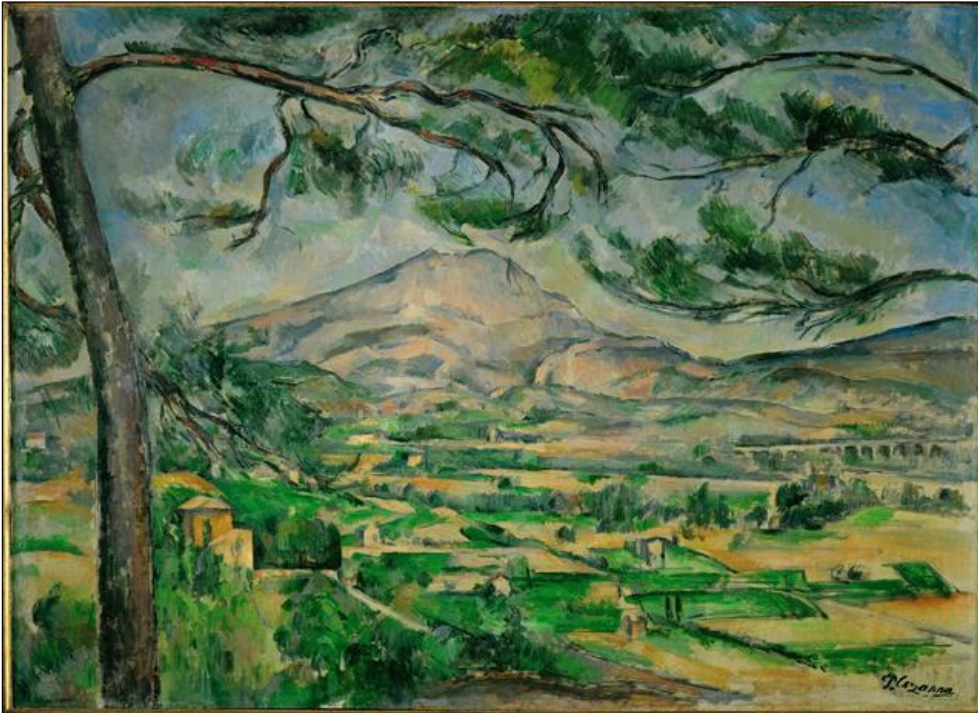


*"Color is my day-long  
obsession, joy and torment."*

*- Claude Monet*



“Light is a thing that cannot be reproduced, but must be represented by something else – by color.”

Paul Cézanne (French, 1839 – 1906)  
*Mont Sainte-Victoire with Large Pine*, ca. 1885-87  
Courtauld Institute of Art, London

Objectively, color is the element of art that is produced when light, striking an object, is reflected back to the eye. The British physicist and mathematician Isaac Newton (1642-1727) determined that clear light is made up of seven visible colors – what we call ROYGBIV – red, orange, yellow, green, blue, indigo, violet. Subjectively, color is a sensation, a human reaction to a hue arising in part from the optic nerve. Colors are also symbols or codes that artists use to convey emotions.

From time immemorial, color has been perhaps the most important tool artists can use to express themselves, to convey a message, and transform viewers intellectually and emotionally. When we examine color through the eyes of the artist, their belief in the power of color comes to the fore. So let's start at the beginning, more than 40,000 years ago.

# Ochre Pit, Yantruwanta Country, South Australia



The use of red ochre, the most common red pigment in the world, has been used for thousands of years. Red and yellow ochre are found where the ground is full of iron. These were pulverized and then mixed with plant resins, orchid sap, egg, blood, saliva, animal fat, or honey applied with sticks or fingers, or brushes made from animal hair, or blown from the prehistoric artists' mouths, or using a blowpipe.





The Australian Aboriginal painting tradition of using red ochre dates back more than 40,000 years. In the Tiwi Islands off the northern coast, the people established a way to avoid intermarriage by identifying children by a specific color.

Some children are red, representing the sun. Others are black, representing stone. Others are white, for the pandanus bush, and the rest yellow, for the mullet fish. For example, reds can only marry yellow or white, but cannot marry red or black. The colors are derived from red and yellow ochre that consists of at least 20% iron oxide, as well as white clay and charcoal. They are used for objects such as Pukumani, funeral poles decorated with secret codes about the deceased's life. The Tiwi islanders use the term *Pukamini* to indicate the ceremonies with songs and dance, and refer to the cycle of life, death and rebirth.



Red and yellow ochre are found in many places in Australia, including the site Wilgie Mia, or Kangaroo Dying, in the Weld Ranges, where it is said that the primordial kangaroo, Marlu, in a fight with the rainbow serpent, was speared and fell to his death, with his blood forming the red ochre, the yellow ochre his liver, and his gall the green ochre. This remains a highly sacred site where the rich red ochre was first extracted more than 30,000 years ago, making this the oldest continuing mining operation in the world. It is still considered by traditional Aboriginals to be dangerous, only seen by certain men, and never by women. The red ochre continues to be used today in Aboriginal law, art, ceremony, and healing practices, as well as in rock paintings and body painting throughout the Western Desert.

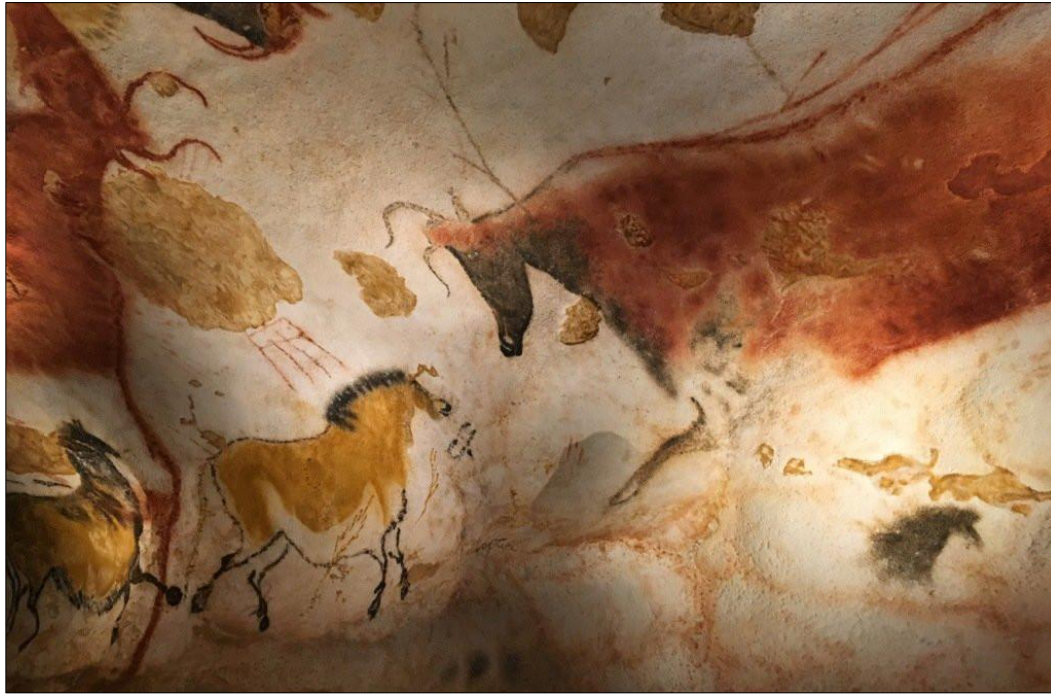


Red ochre was also used in rock paintings in Southern Africa. Mining activity at the Lion Cave in Swaziland is dates back 43,000 years, but is no longer used. In 2008, archaeologists in the Southern Cape unearthed the earliest known paint kit, dating an estimated 80,000 years ago. It contains abalone shells used as palette bowls, red and yellow ochre, stone tools to grind the pigments, and bone spatulas used to mix the colors.





The famous caves at Lascaux, France, were “discovered” in 1940 by four boys who had heard stories about ancient tunnels in the nearby forest. They entered through a hole and went down a terrifying 40-foot shaft into a limestone cavern with stalagmites, stalactites, and amazing paintings of horses, stags, and bison. In the center of the cavern was a huge bull, outlined in strong black lines and filled with yellow, red, white, and brown colors – all colors readily found in nature. The result is color that can last thousands of years. Earlier this century, scientists in France tested the black paint used in Lascaux and discovered it contained a type of manganese oxide that requires temperatures of about 1650° Fahrenheit to develop.



When you look at the paintings, you can see that the varying colors, shading, depth, and type of application used by the artists created a sense of sunlight hitting the backs of the animals. Sadly, when the caves were opened to the public, as many as 40,000 visitors each year, their breath and warm air created dew on the walls. Coupled with electric lights, the paintings that had been preserved in the darkness for thousands of years were fading badly in just 20 years. Today, access to the caves is limited to Lascaux IV, a stunning replica opened in 2016, with entry by timed tickets. Lascaux, and other Paleolithic paintings worldwide are evidence of the human capacity to interpret their environment. Using naturally occurring pigments, they are a revolutionary accomplishment in the intellectual development of human kind.





Egyptian Blue is the first recognized artificial pigment, made as early as the 4<sup>th</sup> Dynasty of ancient Egypt, ca. 2613-2494 BCE, a time of peace and prosperity during which trade with other countries is documented. Egyptian Blue derives from trade with Afghanistan, then known as Bactria, where the only natural occurring Lapis Lazuli has been mined for more than 6,500 years. Because of the scarcity of Lapis, as well as turquoise, the ancient Egyptians, who greatly valued the brilliant blue of Lapis, made the artificial pigment combining lime, sand, malachite containing copper, and blue azurite, then heating it until it turned into an opaque blue material that could then be mixed with egg white or acacia gum to make paint. It continued to be used during the Roman Empire, but because of the complexity of its composition, the methods was last in later years.

Tomb of Horemheb, Saqqara, ca. 1319-1292 BCE. Wall painting of Egyptian gods Osiris, Anubis, and Horus.



“Purple makes a fine shroud.”  
Theodora

Empress Theodora and her  
attendants  
Church of San Vitale,  
Ravenna, 547 CE

Purple is considered the most sought after color in history. Purple is relatively rare in nature, and the exotic color has accordingly been considered sacred. During the Roman Empire, dozens of pigments were brought to Rome by way of trade and conquest. One of the favorite colors was purpura, or Tyrian purple, made from the macerated enzymes of small shellfish. Depending on the fixative, the color can actually range from dark purple to violet to pink. According to classical mythology, Hercules’ dog discovered the color after picking up a snail from the beach and developing purple drool. Purple came to represent spirituality because the ancient leaders that donned it were widely considered to be descendants of the gods. Julius Caesar, returning from his tryst with Cleopatra and seeing her barges with sails dyed purple, declared that only Caesars could wear purple. Nero, in the first century of the common era, ruled that almost no one could wear purple without the threat of execution, although senators were allowed to have togas with a stripe of purple. Tyrian purple soon lost popularity because of its stench – rotting shellfish soaking in stale urine mixed with wood ash and water.



Purple (or violet), made by less putrid means, has continued to be the color of royalty. In 1547 when Henry Howard, Earl of Surrey, was tried for high treason against Henry VIII, the evidence against him included testimony that he was seen wearing purple, which only the king was allowed to wear. The original Tudor crown, as a potent symbol of power and religious authority, was melted down at the Tower of London in 1649 on the orders of Oliver Cromwell, following the abolition of the monarchy.

Portrait of Henry Howard, Earl of Surrey, ca. 1546  
National Portrait Gallery, London

Lost Crown of Henry VIII (reproduction)



Through the centuries, purple came to be symbolically representative of compassion, mysticism, sadness, and suffering, which is why it is used in the Western church during Advent and Lent.

With the advent of a synthetic purple pigment in the mid-19<sup>th</sup> century, the color became widely used. Purple hues were especially popular with the Pre-Raphaelite painters of England. Their characteristic purple was made from mixing cobalt blue with the pulp of the madder root.

Evelyn De Morgan

*In Memoriam*, 1898

De Morgan Collection & Foundation, England



In 1841, a little-known American portrait painter and scientist, John Goffe Rand, grew tired of the tried-and-true method of preserving pigments in a pig's bladder. He experimented with a portable option, a collapsible paint tube made of tin that allowed for the production of pre-mixed paints such as Manganese Violet. Without the need to mix pigments with a media and fixative, artists could paint *en plein air*.



Monet declared, “I have finally discovered the true color of the atmosphere. It’s violet. Fresh air is violet.” The Impressionists so loved this new hue that critics accused them of having “violettomania.” For many, purple is considered tiring for the eyes and can cause a sense of frustration. As such, it is often used to symbolize lust or sorrow.

Claude Monet  
*Nymphaeas*, 1915  
Musée Marmottan Monet,  
Giverny



The color gold was the most revered of colors during the Middle Ages, and in Christian iconography of the era symbolized purity, holiness in life, and the innocence of the soul. Because it was difficult to grind as a pigment, it was instead hammered to a sliver (actually 4 millionths of an inch) and applied as gold leaf using honey or rabbit skin glue as a fixative, and either burnished to a smooth finish or embossed with a texture. During the Middle Ages and Renaissance, Christian paintings were viewed by flickering candlelight in a dark church, making the painting glow and come alive with movement.

Duccio di Buoninsegna (Sienese, d. 1311)  
*Rucellai Madonna*, commissioned 1285  
Galleria degli Uffizi, Florence



In many ancient cultures, gold was considered to represent the sun. In Christianity, that changed when Giotto believed the color blue to represent heaven. This was a complete departure from the gold that was associated with opulence and grandeur. The blue sky that fills large portions of the Scrovegni Chapel provide an expansive feeling of eternal existence.

Giotto (Florentine, 1267 - 1337)  
Scrovegni Chapel, Padua, 1303 - 1305





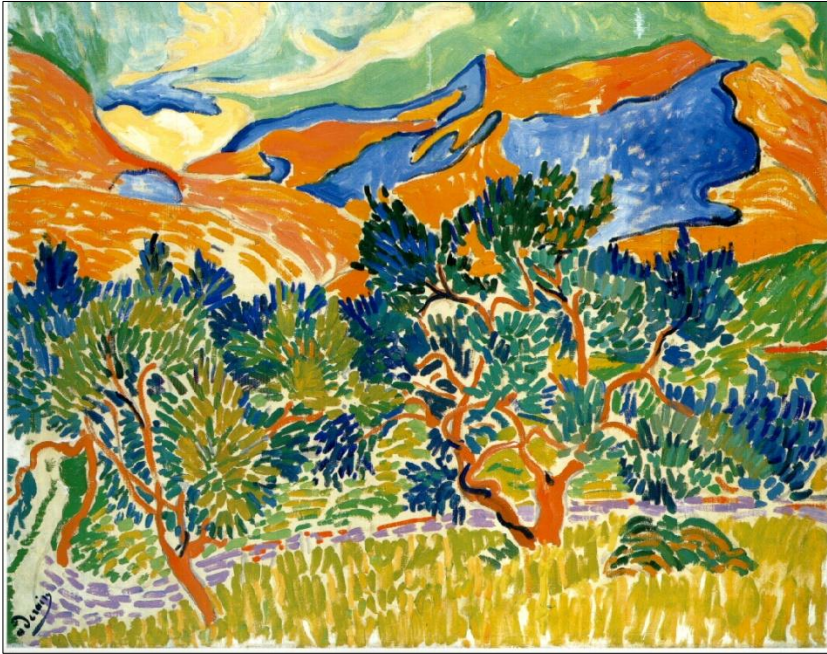
In Christian iconography, blue became symbolic of heavenly love and the color traditionally worn by the Virgin Mary, a choice made not so much for religious significance but rather because of its high price tag. When made with Lapis Lazuli, the gemstone found only in a single mountain range in Afghanistan, it rivaled the cost of gold.

Masaccio (Florentine, 1401-1428)  
*Madonna Enthroned* (from the Pisa Altarpiece,  
1426-1427)  
Santa Maria del Carmine, Pisa





The color was later used in Vermeer's wildly popular *Girl with the Pearl Earring* (1665).  
Mauritshuis, The Hague, Netherlands



And by the Fauves, the so-called Wild Beasts of early Modernism, who employed arbitrary color, a choice of color in an artwork that has no basis in the realistic appearance of the object depicted.

Andre Derain (French, 1880-1954)  
*Landscape at Collioure*, 1950  
National Gallery of Art, Washington DC

The German Expressionists of the same era likewise used arbitrary color for emotional or expressive significance.



Franz Marc (German, 1880-1916)  
*The Large Blue Horses*, 1911  
Walker Art Center, Minneapolis



Blue is also considered the most calming of all colors and representative of tranquility, serenity, and harmony, but, conversely, depression and sadness. Research supports the contention that Picasso's three-year Blue Period (1901-1904) is a reflection of his depression following the tragic suicide of his friend Carlos Casagemas, when he changed from a gregarious personality to reclusiveness. Probably his best known work from this period is *The Old Guitarist*, an old blind beggar in ragged clothing in the streets of Barcelona, which shows how the color blue can propel the view into a state of gloom and melancholy.

Pablo Picasso (Spanish, 1881-1973)  
*The Old Guitarist*, 1903  
Art Institute of Chicago



In the 1950s, the French artist Yves Klein (1928-1962) collaborated with a paint supplier to create a synthetic ultramarine blue, now known as Klein Blue. Explaining the appeal of this color, he said: “Blue has no dimensions. It is beyond dimensions.”



Yellow is one of the oldest colors in the history of art, as we have seen with the prehistoric use of yellow ochre. Because of its associations with sunlight, yellow is often seen as a warm color, with connotations of happiness, energy, optimism, and life itself. In Medieval and Renaissance religious paintings, it is also the color worn by Judas, so it symbolizes deceit. Color has always been recognized for its symbolic power, however, the interpretation varies over time, culture, and country. In Egypt it represents happiness and prosperity, while in China it is the imperial color to worship and only the emperor could wear it. Yellow is also representative of outsiders of the faith. During the Renaissance, Jewish people were marked with the color yellow. This was brought back in during the Third Reich, when Jews were made to wear a yellow star of David.



Giotto (Florentine, 1267 - 1337)  
*Betrayal of Christ (Kiss of Judas)*, ca. 1304-1306



J.M.W. Turner (English, 1775 – 1851)  
*The Burning of the Houses of  
Parliament (#3)*, 1835  
Cleveland Museum of Art

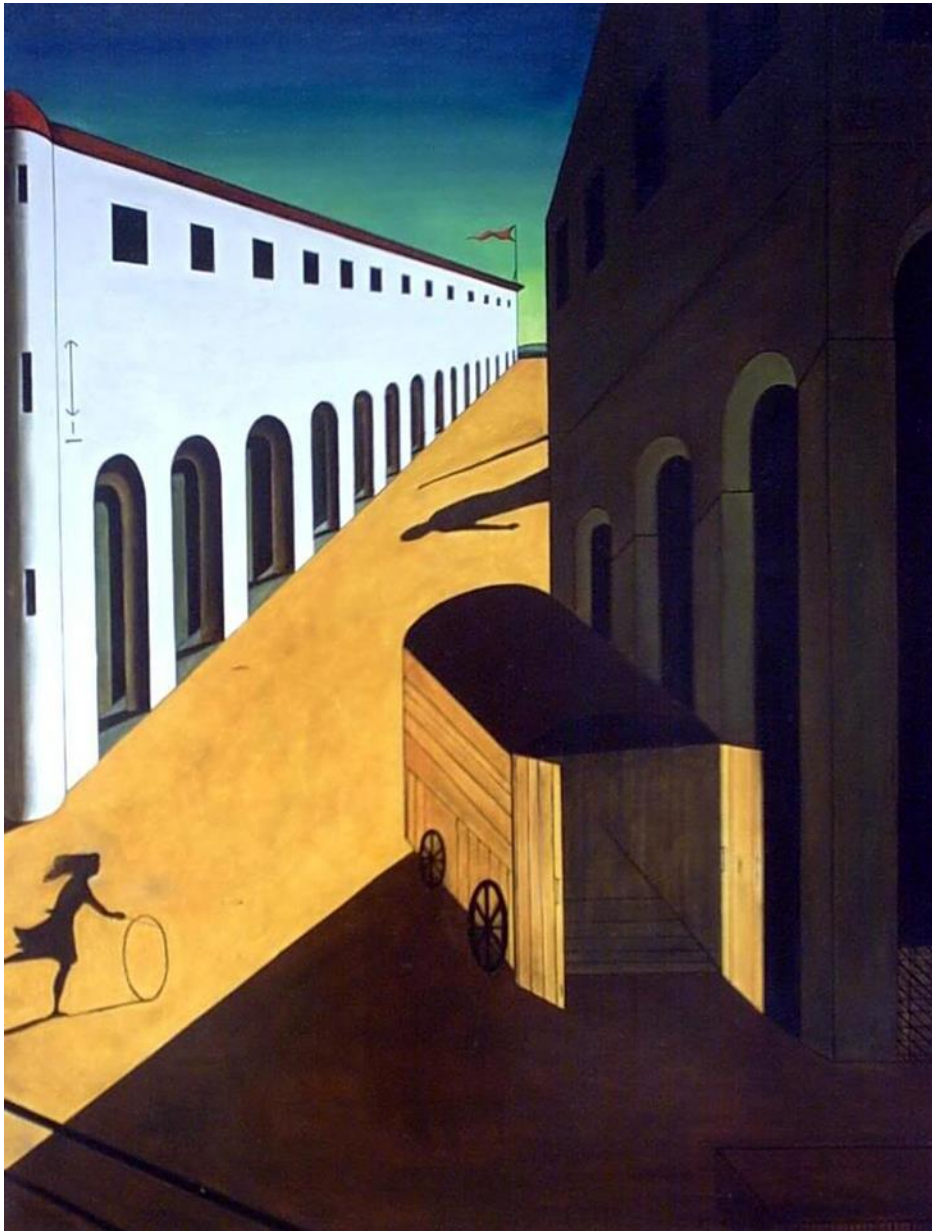
James Mallord William Turner, the English Romantic painter, is known for his expressive use of color and his passion for the color yellow. Some critics wrote that his paintings were “afflicted with jaundice.” Turner frequently used the experimental Indian Yellow, a fluorescent paint derived from the urine of mango-fed cows. For brighter accents, he used Chrome Yellow, a lead-based pigment known to cause delirium.



van Gogh is known for using multiple vibrant colors, and he used yellow most of all. This can be seen in his seven paintings of sunflowers; the painting of 1889 was created (using Chrome Yellow) to welcome his friend Paul Gauguin to the Yellow House in Arles. Gauguin wrote of his friend: "Oh yes! He loved yellow, did good Vincent, the painter from Holland, gleams of sunlight warmed his soul, which detested fog."

Vincent van Gogh (Dutch, 1853-1890)  
*Sunflowers*, 1889  
National Gallery of Art, London

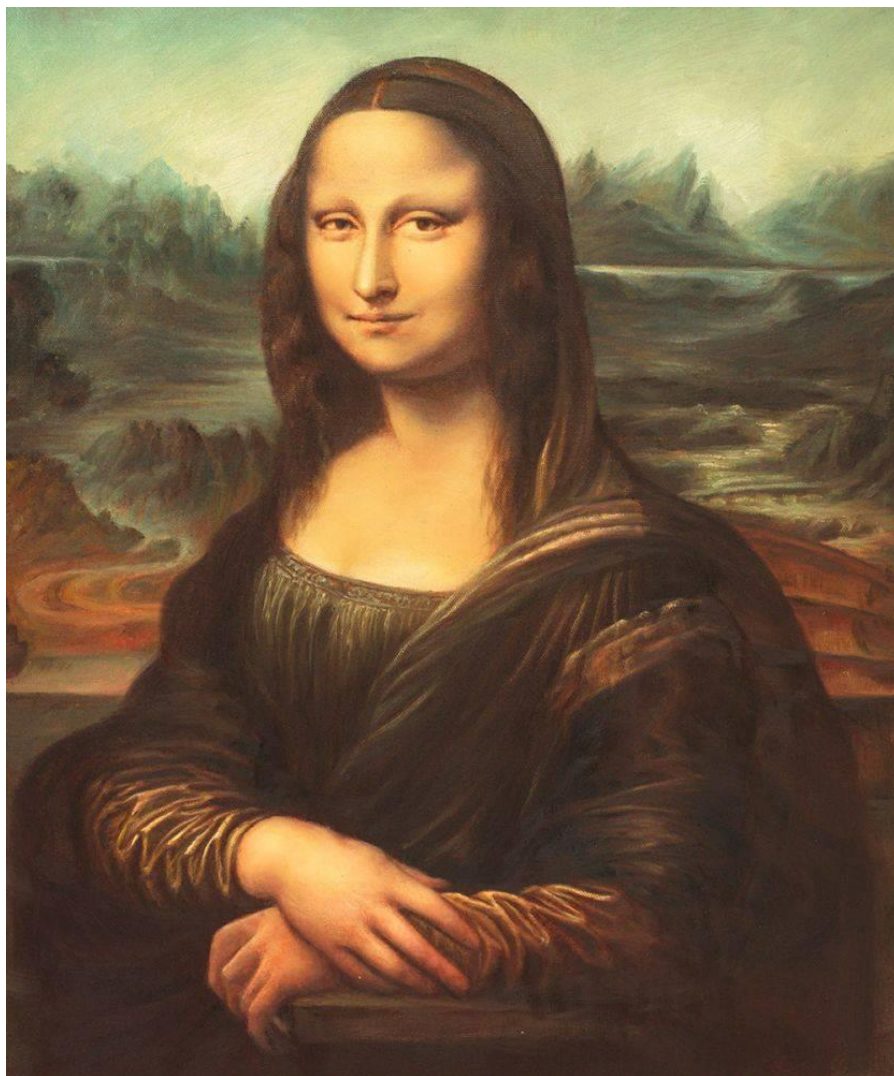




But a dirty or jaundiced yellow can bring about an ominous air.

Yellow is the most visible color. Don't use it as a computer background. Insect blood is usually pale yellow. If you squish a mosquito, the red blood is probably your own.

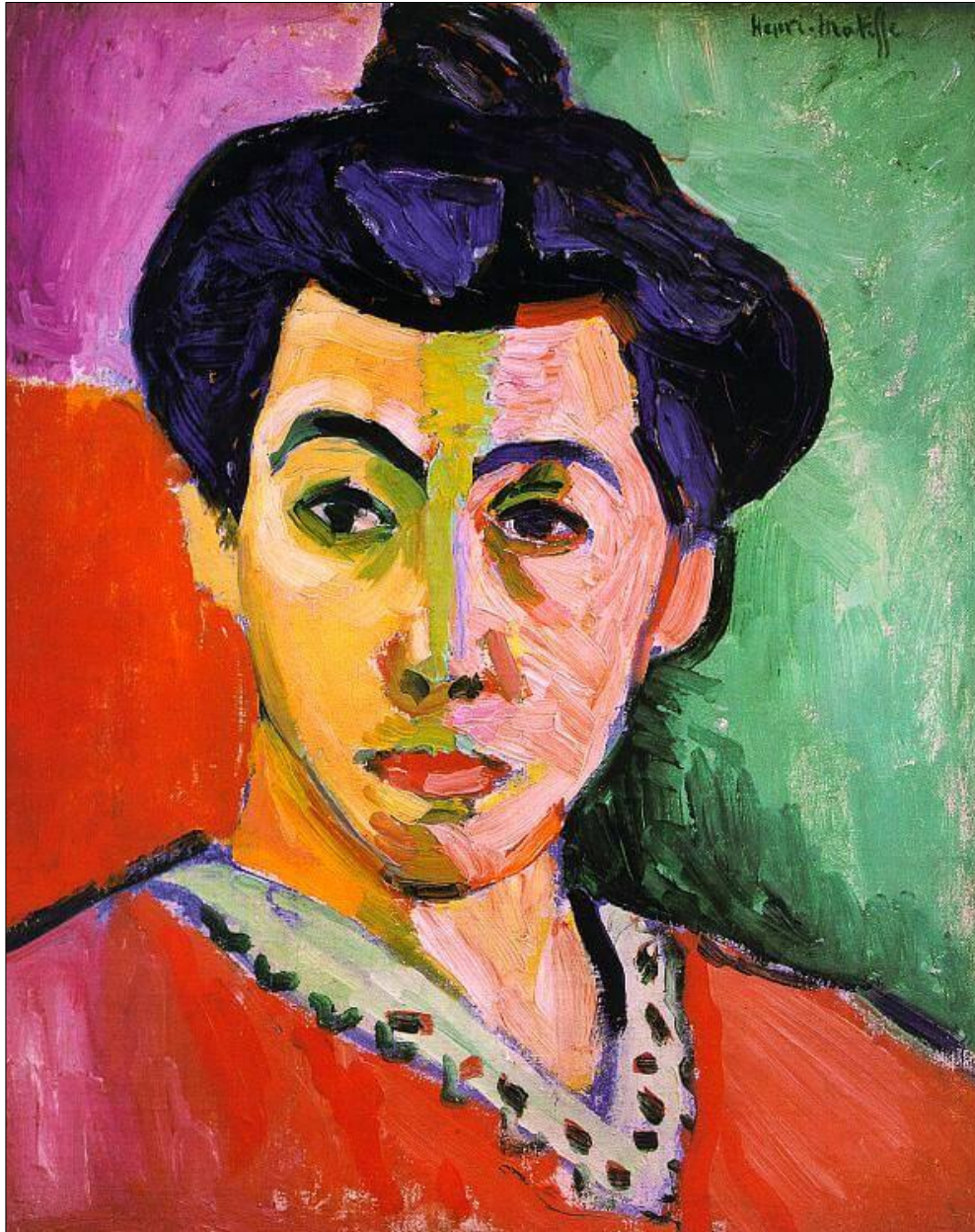
Giorgio de Chirico (Italian, 1888-1978)  
*Mystery and Melancholy of the Street*,  
1914  
Private Collection



Earth green is a color used since Classical antiquity. During the Middle Ages and Renaissance, it was used as the first layer of paint for faces, overlaid with pink tones and lead white. This can be seen in Leonardo's iconic *Mona Lisa*, a portrait Lisa Gherardini, wife of the Florentine merchant Francesco del Giocondo (but not when you see it behind bullet-proof glass at the Louvre).

Leonardo da Vinci (Florentine, 1452-1519)  
*La Gioconde (Mona Lisa)*, ca. 1503-1519  
Musée du Louvre, Paris





The French Modernist Henri Matisse used this convention, albeit abstractly in his painting of Madame Matisse. He wrote: “The chief function of color should be used to serve expression...When I put a green, it is not grass. When I put a blue, it is not the sky.”

Henri Matisse (French, 1869-1954)  
*Green Stripe*, 1905  
Royal Museum of Fine Arts,  
Copenhagen



In a Christian context, green is the color of fertility, as in the Arnolfini wedding portrait, and representative of the bountifulness of the earth, hope, and victory over death, as in Campin's *Nativity*.

Jan van Eyck (Flemish, 1390 – 1441)  
*The Arnolfini Wedding*, 1434  
National Gallery of Art, London



Robert Campin (Netherlandish, 1375-1444)  
*The Nativity*, 1420  
Musée des Beaux Arts, Dijon



Green is symbolic of comfort, equilibrium, and neutrality, but also laziness and mucous. And for some, death. In 1775, Swedish chemist Carl Wilhelm Scheele invented a deadly hue, Scheele's Green, a bright green pigment laced with the toxic chemical arsenic. By the end of the 19<sup>th</sup> century, it was widely replaced by Paris Green, a more stable pigment based on copper carbonate. Napoleon Bonaparte's bedroom on St. Helena had a wallpaper that used Scheele's Green. It has been speculated that this contributed to his death in 1821. as a lock of his hair has since uncovered high levels of arsenic.

Charles de Steuben (French, 1788-1856)

*Death of Napoleon*, 1825

Private Collection



Another deadly paint used for centuries, along with Chrome Yellow and Scheele's Green, was Lead White, now banned in the U.S. since 1978. Lead White was prized by artists for its ability to capture and reflect light more than any other pigment. The 17<sup>th</sup> century method for producing it was by layering horse and cow manure over lead and vinegar, then leaving it in a sealed room for three months until it created flakes of pure white. The Spanish artist Goya once said: "In art, there is no need for color; I see only light and shade." His prolific use of Lead White is believed to contribute to an illness that lasted several months and resulted in the loss of hearing, some vision, dizziness, weakness, tinnitus, and hallucinations. His work is easily divided into the periods before and after his illness, when his work became progressively more gloomy, satirical, and introspective.

Francisco de Goya y Lucientes (Spanish, 1746-1828)  
*Portrait of Ferdinand VII*, 1814  
Museo de Prado, Madrid



Prehistoric artists used charcoal, minerals, and charred animal bones to produce black pigment. The use of bone black was also preferred by the Old Masters. Burning animal bones in an air-free chamber produced an intense black pigment. Rembrandt's choice of colors included bone black along with lead white and earth pigments such as ochres and umbers. With this restricted palette, Rembrandt created nuanced optical effects and combinations of color.

Rembrandt van Rijn  
(Dutch, 1606-1669)  
*Self-Portrait with Two Circles*,  
ca. 1665-1669  
Kenwood House, London

ce fait d'amee prince du monde pour ce qm tient de preset  
 truant seigneurie en ce monde. En ses nefz sept devant  
 dites sont les sept barons au prince d'enfer qm manent  
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*Car tes ennemis*

In the Western world, black has traditionally been of death and mourning. It has also been associated with power, authority, and sophistication, as well as emptiness and the unknown. In Christian iconography, it is used to represent evil, magic, mystery, the underworld, and the devil.

Jehan Dupin, Monk of Vaucelles  
 French, ca. 15<sup>th</sup> Century  
*Les Mémoires de Jehan Dupin on the  
 Condition of the World*  
 Manuscript Illumination  
 Bibliothèque de l'Arsenal, France



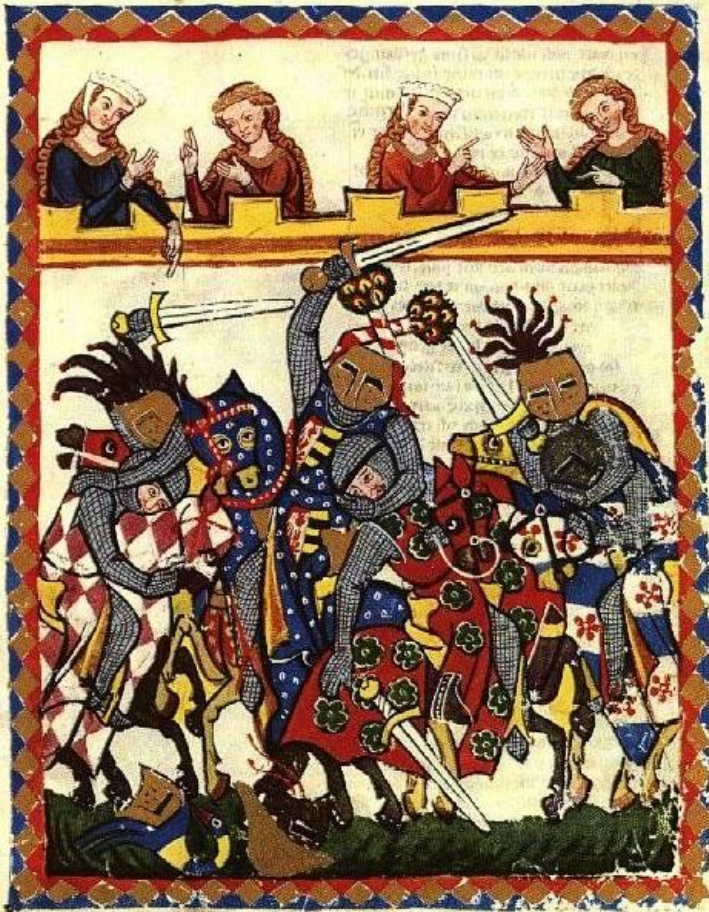


The Impressionists, inspired by scientific research in color theory, abandoned the use of the color black altogether. Rather than abiding by the idea that shadow was made up from the color of the object with some black or brown added, they used opposite, or complementary, colors, to create shadows and increase the changing effects of light on an object. Monet, the greatest exponent of Impressionism, used this new technique in his series of more than 30 paintings of the Rouen Cathedral at different times of the day.

Claude Monet (French, 1840-1926)

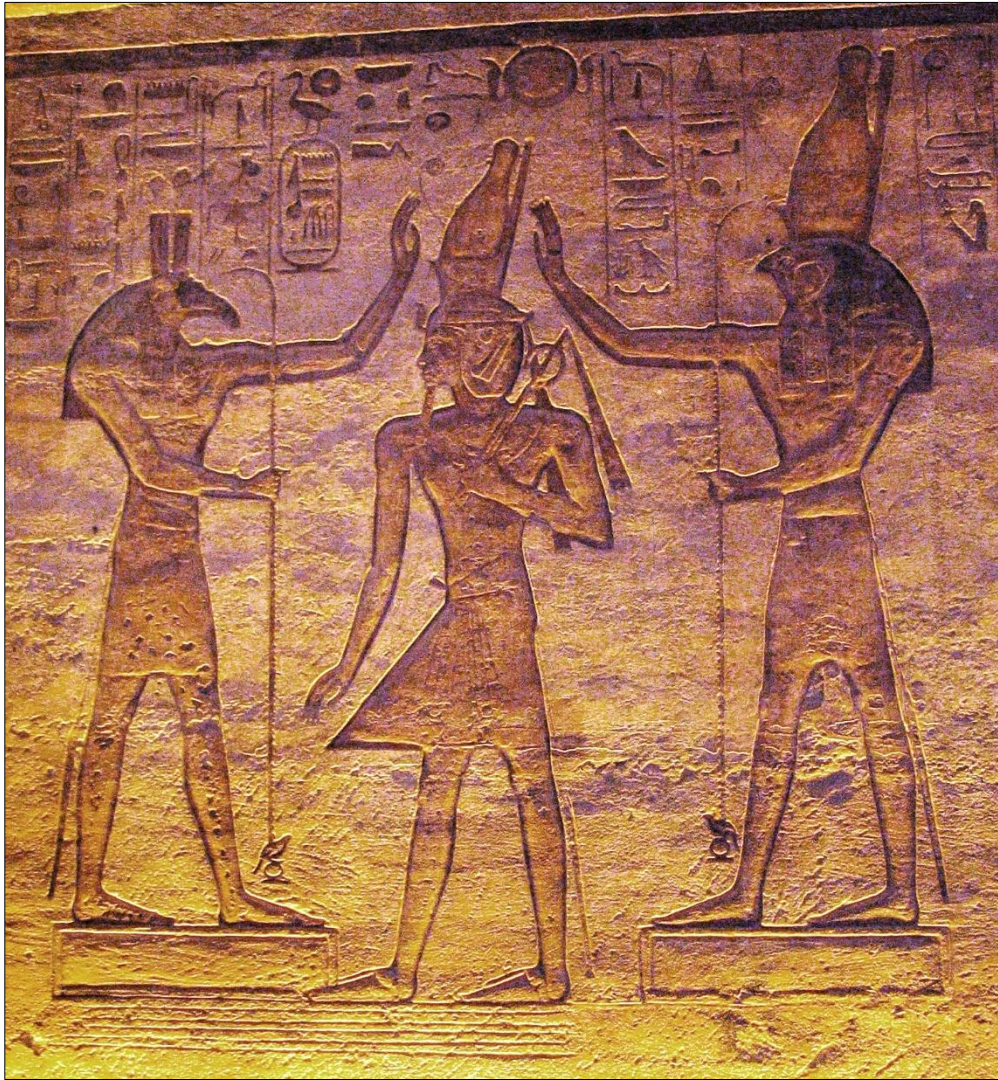
*Rouen Cathedral*, ca. 1892-1894

Various collections



Red, the color of fire and blood, of energy and primal life forces, has powerful symbolic meanings used in religion, heraldry, alchemy, literature, and art. It is the color of extremes, associated with love, passion, desire, heat, longing, lust, sexuality, sensitivity, romance, joy, strength, leadership, excitement, courage, vigor, willpower, rage, danger, malice, wrath, stress, impulsivity, aggression, bravery, enthusiasm, action, vibrancy, temper, agitation, anger, radiance, and determination. Neolithic hunters and early Germanic warriors painted their weapons with the blood of slain animals to endow the weapons with magic power.

Manesse Codex  
Germany, ca. 1304  
Heidelberg University Library



In ancient Egypt, red was used to depict Set (Seth), the god of the red desert, storms, envy, disorder, and violence. In the guise of monstrous animals, Set impersonated evil, caused chaos, confusion, and bad weather. And he killed his brother Osiris. According to myth, Osiris was the divine primeval pharaoh. Seth killed him so he could become pharaoh. The goddess Isis brought Osiris back to life for one night to conceive their son, Horus. Osiris was thereafter the god of fertility, agriculture, the afterlife, the dead, resurrection, life, and vegetation.

*Set and Horus Adoring Ramesses*  
Small Temple, Abu Simpel  
New Kingdom, ca. 1264 BCE



In Christian art, red was used signify spiritual awakening, atonement, and humility, and is symbolic of the blood of martyrs. Paradoxically, Satan is often depicted as red or wearing red, representing wrath, one of the seven deadly sins.



Vincenzo Foppa (Italian, ca. 1427-1515)  
*St. Stephen, Martyr*, ca. late 15<sup>th</sup> century  
Hermitage, St. Petersburg, Russia

*First Temptation of Christ* (detail)  
English Psalter, ca, 1200-1225

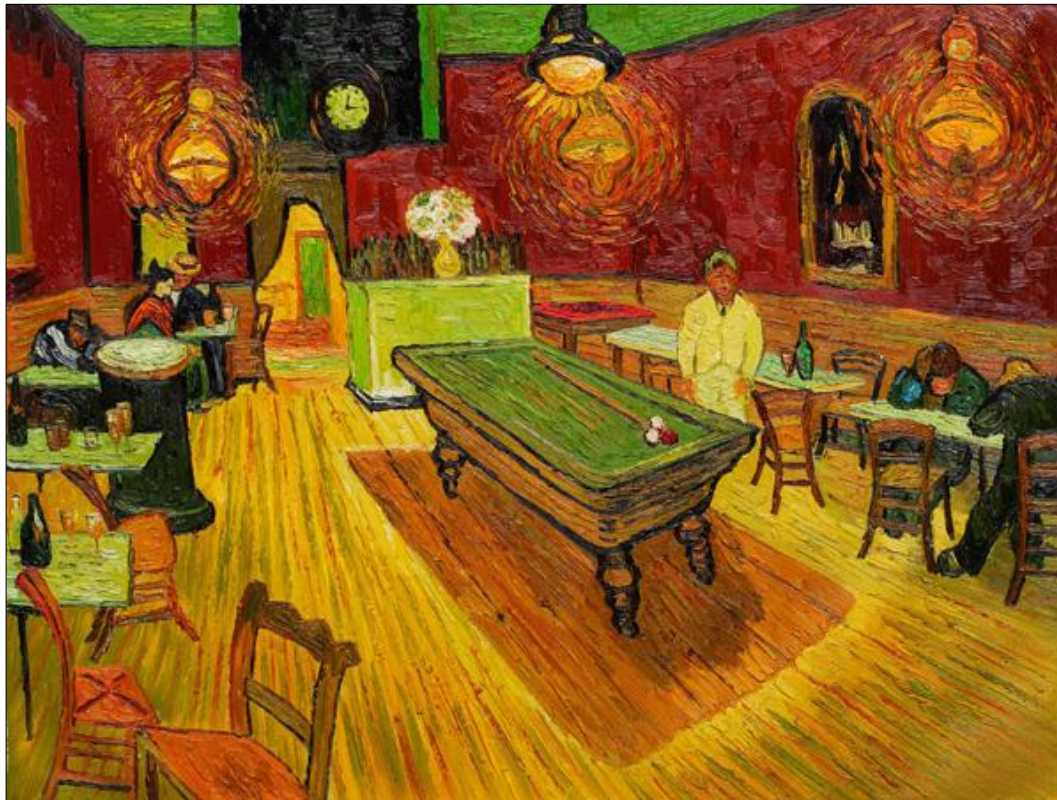


Paul Gauguin, in his masterpiece *Vision After the Sermon*, depicts Jacob wrestling with the angel in a blood red field of spiritual battle. The Breton women, dressed in distinctive regional costume, have just listened to a sermon based on a passage from the Book of Genesis that relates the story of Jacob, who, after fording the river Jabbok with his family, spent the whole night wrestling with a mysterious angel. In a letter Gauguin wrote to van Gogh, he said: “For me the landscape and the fight only exist in the imagination of the people praying after the sermon.”

Paul Gauguin (French, 1848 – 1903)

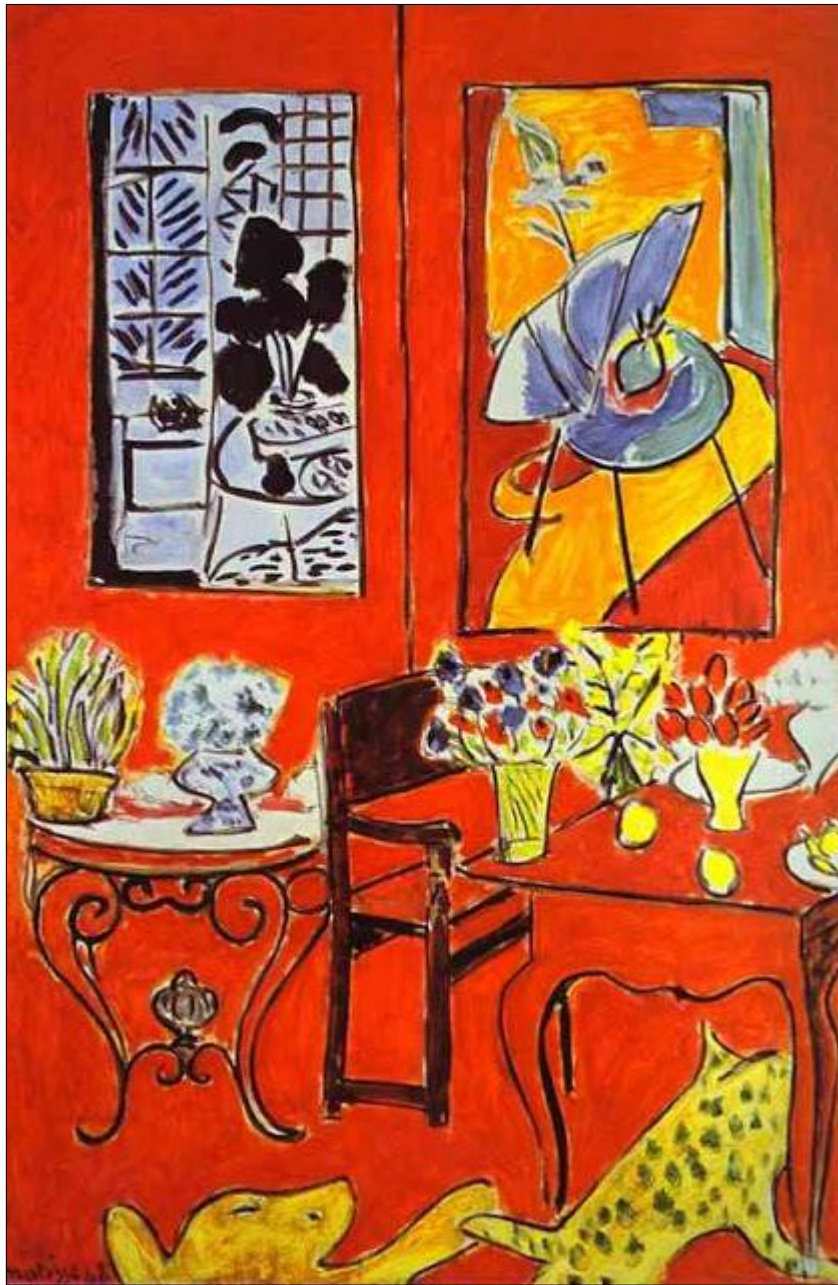
*Vision After the Sermon* (Jacob Wrestling the Angel), 1888

National Gallery of Scotland



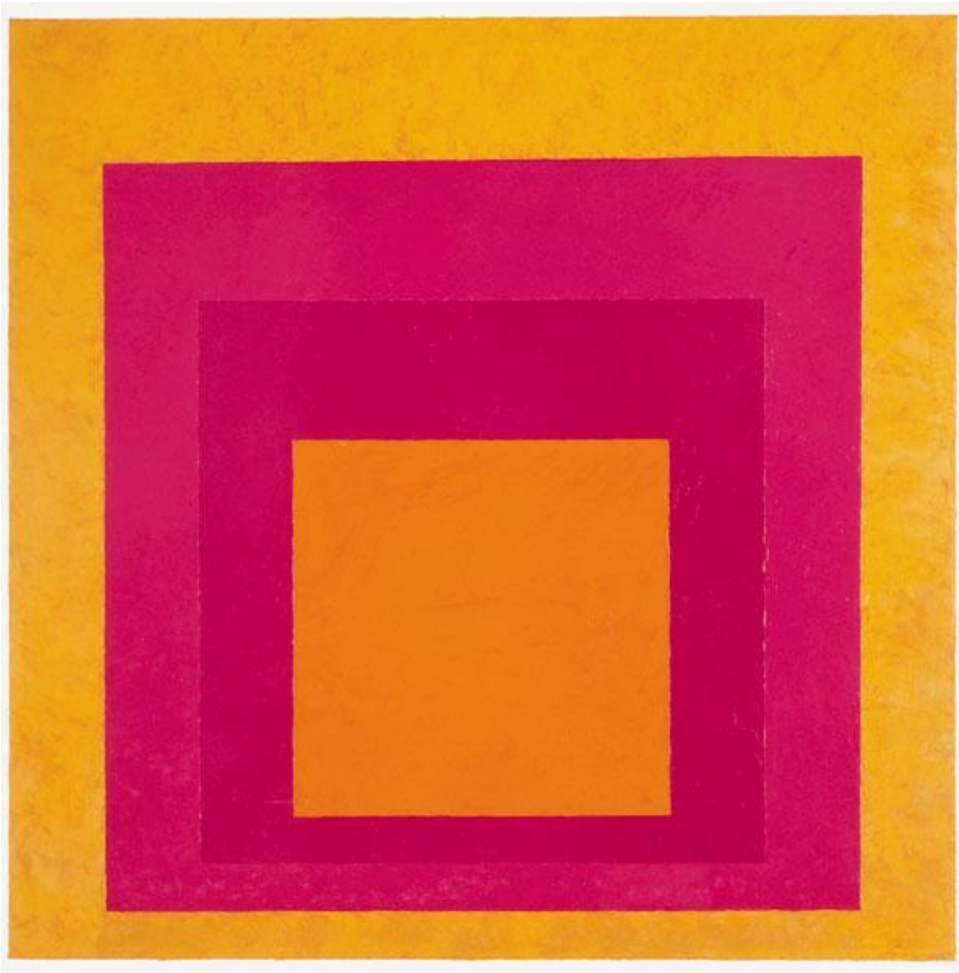
Van Gogh himself wrote in a letter to his brother, Theo, about the painting *The Night Café*:  
“I sought to express with red and green the terrible human passions.”

Vincent van Gogh (Dutch, 1853 – 1890)  
*The Night Café*, 1888  
Yale University Art Gallery



Matisse, one of the first prominent painters to use the new cadmium red, a synthetic color developed by the German chemical industry to mimic natural vermilion, wrote: "A certain blue penetrates your soul. Red affects your blood pressure."

Henri Matisse (French, 1869-1954)  
*Large Red Interior*, 1948  
Georges Pompidou Center, Paris



Josef Albers (German-American, 1888-1976)  
*Homage to the Square (La Tehuana)*, 1951  
Modern Art Museum of Fort Worth, Texas

Since the time of Isaac Newton's publication (1672) of the discovery that light generates color, various charts and graphs were developed in an attempt to arrange color in logical and orderly patterns. They were widely used in art academies, under the assumption that a knowledge of color would benefit the artist.

It was the artist, teacher, and color theorist, Josef Albers, however, who revolutionized the method of teaching color. Beginning in 1949, Albers created an ongoing series of paintings, *Homage to the Square*, that demonstrated his color theory through an exploration of different colored squares.

The studies were based on simultaneous contrast, that is the way in which two different colors affect each other and how we perceive the tone and hue when placed side by side. The colors don't change, but the optical illusion created alters the way we see them.



Every artist has a color theory. Color schemes vary depending on what the artist wants to convey – a mood, an expression, to capture the light or the time of day, or to create a dynamic image.

Monet wrote advice to other artists: “When you go out to paint, try to forget what objects you have before you, a tree, a house, a field or whatever. Merely think here is a little square of blue, here an oblong of pink, here a streak of yellow, and paint it just as it looks to you, the exact color and shape.”

In his publication, “On Monumentality and Color” (1943), the French artist Fernand Leger wrote: “The craving for color is a natural necessity just as for water and fire. Color is a raw material indispensable to life. At every era of his existence and his history, the human being has associated color with his joys, his actions, and his pleasures.

Wassily Kandinsky, whose other inspiration came from music, said: “Color is a power which influences the soul.”

The Modernist Paul Klee wrote of his art: “Color and I are one. I am a painter.”

From lecture given by Dr. Barbara Rothermel at the Daura Gallery, University of Lynchburg, December 2019.