PART 1: FUNDAMENTALS

The Vocabulary of Art

Edward Hopper, *Rooms by the Sea*, 1951.
Light Value and Color

Color Properties

Color; Hue:
Name of the color.

Value:
Relative lightness or darkness.

Intensity:
Relative purity of a color.
Chapter 1.4
Color
- Color attracts our attention and excites our emotions
- Our perceptions of color are personal and subjective
- Ancient Greek philosophers speculated that color was not a state of matter but a state of mind
- Color is determined by the wavelengths of light it reflects
- The colors we see are those portions of the light spectrum that a surface fails to absorb, and reflects instead
- Reflected light excites nerve cells that line the back of our eyes
- Their nerve signals are reprocessed and interpreted as color in our brain

Introduction
• The primary colors cannot be mixed from any other two colors
• Secondary colors are colors that can be mixed from two primary colors
  • In the color wheel the secondary colors are located between the primary colors because they naturally fall between them in the visible spectrum
• Colors of light and colors of pigment behave differently
• There are two ways of working with color mixtures, known as subtractive and additive
  • Mixed subtractive colors make a darker and duller color
  • Mixed additive colors make colors even lighter

Light and Color
Chapter 1.1 Art in Two Dimensions: Line, Shape, and the Principle of Contrast

1.72 Traditional color wheel (red, yellow, blue primaries)
Light Value and Color

Light and Pigment

**Color; Hue:**
Name of the color.

**Value:**
Relative lightness or darkness.

**Intensity:**
Relative purity of a color.
• Hues are the basic colors of the spectrum
• Red, orange, yellow, green, blue, and violet are hues
1.73 Kane Kwei, *Coffin in the Shape of a Cocoa Pod*, c. 1970. Polychrome wood, 2'10" x 8'6" x 2'5". Fine Arts Museums of San Francisco
Kane Kwei,
Coffin in the Shape of a Cocoa Pod

- Painted with a brilliant middle-orange hue, the color of a half-ripened cocoa pod
- The brightness of the color is exaggerated
  - In Ghana funerals are celebratory, loud affairs where bright color adds to the festive mood
  - Ghanaians believe that having lots of happy people at a funeral gives solace to the family of the deceased
- Kwei’s career started when his dying uncle asked him to build him a boat-shaped coffin
- This coffin was commissioned by a cocoa farmer who wanted to tell everybody about his lifelong passion
• Each hue has a value, meaning its relative lightness or darkness compared to another hue

• Different colors of the same hue vary in terms of their value
  • There are light reds and dark reds
  • Tints are colors that are lighter than their basic hue
  • Shades are colors that are darker

Dimensions of Color: Value
1.74 Color–value relationships
Mark Tansey, *Picasso and Braque*, 1992. Oil on canvas, 5'4” x 7’
A work that uses only one hue is called monochromatic.

An artist can give variety to such a work by using a range of values.

In *Picasso and Braque*, Tansey depicts two figures, whom he refers to as “Orville and Wilbur” (Wright).

He is referring to Pablo Picasso and Georges Braque’s habit of referring to each other as Orville and Wilbur.

The monochromatic palette is reminiscent of the black-and-white photos of the Wright Brothers’ experiments with flight.
• Color in its purest state is its highest level of saturation

• A red at the height of saturation is closest to its pure state in the spectrum
  • A pastel tone and a dark tone would each have a low saturation of color, but a grayed middle value of red would also have a low saturation of color
  • Saturation is not related to value

Dimensions of Color: Saturation
1.76 High and low saturation in a red hue
1.77 Barnett Newman, *Vir Heroicus Sublimis*, 1950–1. Oil on canvas, 7′11¾” x 17′8¼”. MOMA, New York
Barnett Newman, *Vir Heroicus Sublimis*

- Relies on value and saturation of color for its visual impact
- Alternating colors of the narrow vertical lines break up a broad red plane
  - Newman calls these vertical lines “zips”
- Subtle variations in the saturation of the red tones create the sensation that parts of the painting are separately lit
- Newman wants viewers to stand close to the canvas, engulfed by color
• The color wheel displays important color relationships

• Complementary colors contrast strongly with each other

• Analogous colors do not contrast strongly with each other
• When two complementary colors are painted side by side, these “opposite” colors create visual anomalies
  • They intensify one another
  • Each seems more saturated
  • As they have vastly different wavelengths, an illusion (in the photoreceptors of the eye) is created of vibrating movement along adjacent edges of the two complementary colors
  • When complements are set next to each other we tend to see color more intensely than when we see the colors separately
1.79 Color combinations, color complements, and vibrating boundaries
Light Value and Color

Optical Effects

Afterimage: Simultaneous contrast.
un moment
si libres.
Pe devrait-on
pas faire ac.
Completer un
grand voyage
en avion aux
jeunes gens
ayant terminé
leurs études.
Complementary scheme.
Matisse, *Icarus*

The Artist’s Fascination with Color

- Matisse was interested in using vibrant colors to evoke an emotional response.
- As a Fauve he used colors so bright that some viewers considered them violent.
- Matisse began to excel in creating artworks by using scissors to cut out pieces of brightly painted paper.
  - “Paper cutouts allow me to draw in color”
  - “At this moment we are so free, shouldn’t we make young people who have finished their studies take a grand trip by plane”
- Matisse encouraged young people to fly like Icarus.
1.81 Frederic Edwin Church, *Twilight in the Wilderness*, 1860. Oil on canvas, 40 x 64”. Cleveland Museum of Art, Ohio
Frederic Edwin Church,
Twilight in the Wilderness

• Used complementary colors for dramatic effect

• The intense red-orange clouds complement swathes of the blue-green evening sky

• The powerful color of the sky and its reflection in the water below reveal Church’s awe and respect for the American landscape
• Analogous colors are similar in wavelength

• Painters use analogous color to create color unity and harmonies

• By keeping the color within a similar range, artists avoid jarring, contrasting combinations of colors and moods

Analogous Color
Light Value and Color

Color Harmonies
Color conveys emotions.

**Analogous:**
Adjacent hues on the color wheel.

**Triadic:**
3 equidistant colors on the color wheel.

Analogous scheme
Mary Cassatt,
The Boating Party

- Color palette creates a harmonious effect
- Yellows, greens, and blues predominate
- These colors have relatively similar wavelengths and do not intensify each other when placed in close proximity
- Cassatt’s color seems relaxed, reinforcing her theme
  - Cassatt was one of the few female (and only American) members of the Impressionists
  - The Impressionists were a group of artists who shared an interest in the effects of light and color
1.83 Howard Hodgkin, *Interior with Figures*, 1977–84. Oil on wood, 54 x 60”. Private collection
Howard Hodgkin, *Interior with Figures*

- Pinkish verticals on each side of the scene make a frame of analogous colors for the saturated reds in the space between

- Deep crimsons, fleshy pinks, and countless dabs of scarlet fill this scene with heat

- Red is dominant here and heightens our response to an enigmatically erotic encounter
• Our experiences of color are sometimes evocative or physical
• Some colors are associated with emotional states
• Blue is also associated with cold, and red with hot: an association known as color temperature
• Because of color saturation, our eyes cannot fully comprehend all the colors we see, so our brain translates (or distorts) the incoming information
• This is the basis of an illusion known as optical color

Our Perceptions of Color
• We associate color with temperature because of our previous experiences

• Artists use such associations to communicate physical and emotional states

• Color temperature is relative to the other colors nearby

• Our perception of the temperature of a color can be altered if it is placed next to an analogous color

**Color Temperature**
Mosque lamp from the Dome of the Rock in Jerusalem

- The blue, green, and white reflect the kind of color influence valued in the meditative atmosphere of a holy place

- The choice of colors is cool and peaceful

- The color green has positive associations in Islamic art and supports the peacefulness of prayer
Optical colors are colors our minds create based on the information we can perceive.

Optical Color
1.85 Two squares, one filled with red and blue dots and the other with red and yellow dots to create optical color mixing effect.
Oil on canvas, 6¾" x 4′11¾". Musée d'Orsay, Paris, France
1.87 Detail of Georges Seurat, *The Circus*
Light Value and Color Optical Effects

Pointillism: Dots of pure color that tend to mix in our eyes to produce the illusion of color mixtures.
Georges Seurat, 

*The Circus*

- Uses small dots of color
- Pointillism—devised by Seurat—is the use of such small dots of color to produce optical color mixtures
- Because these dots are so close together, the colors we see are different from the actual colors of the dots
- Optical mixing makes the colors more intense because they have retained their individual saturation
- The jewel-like diffusion of light and vibration of color make the painting visually exciting
Georges Seurat: Sunday on La Grande Jatte

Gateways to Art: Understanding the Visual Arts
by Debra J. DeWitte, Ralph M. Larmann, M. Kathryn Shields

Click the image above to launch the video
Artists who design images for commercial printing or to display on video screens take a different approach to color.
1.88 Color wheel for commercial printing inks
1.89 Subtractive color mixtures using CMY primaries, CMYK color separation, and image with exaggerated print screen
Four color printing technique

Det. Boticelli Birth of Venus
CMYK Printing

- The color wheel for printing is referred to as CMYK
  - C cyan, M magenta, Y yellow, K black
- An image is scanned and separated into the four colors
- The image is re-created when the separated colors are printed in sequence, overlapping each other
- The four colored inks are printed on paper as dots in a regular pattern (“screen”)
  - The smaller the dot, the less of each color is printed
- Because the pictures are divided into tiny dots of color, optical color mixing also plays a role in the control and perception of CMYK color
• A digital display is illuminated by three different colored light cells, called phosphors
• Uses primary colors of red, green, and blue (additive)
• The electronic monitor turns a combination of phosphors on or off to produce the colors the designer wants
  • If the red and blue phosphors are on, the color on the display will be magenta
  • If all three of the primaries are on, the combination will result in white light
  • Complex combinations of these color lighting cells will result in millions of color possibilities
1.90 Color wheel for light using red, green, and blue primaries
1.91 Additive color mixtures using RGB primaries
Charles Csuri,  
*Wondrous Spring*

- The digital artist Charles Csuri has been creating imagery on computers since 1963
- In *Wondrous Spring*, the RGB primaries create a dazzling illuminated array of colors, reminiscent of a modern-day stained-glass window
- Csuri has explored and helped develop the digital realm as a viable art medium
- Digital works have a glow and rich color that bring new dimensions of color to art and design
• Color affects how we think and feel
• Studies by psychologists show that color can affect human behavior
• Advertisers can reach their audience better by knowing how people respond to color
• Colors also have traditional symbolic values
  • Green has positive associations for Muslims
  • Confucius and Buddha wore yellow or gold
  • Jews and Christians associate the color blue with God
• Color affects us physiologically because it alters our psyche

• Artists understand that color affects the way we think and react to the world

• There do appear to be some universal psychological associations to particular colors—for example, red may provoke feelings of passion or anger

The Psychology of Color
1.93 Vincent van Gogh, *The Night Café*, 1888. Oil on canvas, 28½ x 36¼". Yale University Art Gallery, New Haven, Connecticut
Vincent van Gogh, *The Night Café*

- Van Gogh was greatly affected by color, and studied its psychological effects.
- The colors in the painting *The Night Café* were carefully chosen to elicit emotional responses from viewers.
  - “I have tried to express with red and green the terrible passions of human nature.” (Van Gogh in a letter to his brother Theo)
- The color intensifies the psychological implications of the scene in a seedy nightspot in Arles, France.
• Artists sometimes want a viewer of a work to “feel” an artwork, rather than merely to understand it

• Color can express a wide range of emotions

• Artists can use color to engage the viewer
Emotional responses to color are both cultural and personal.
1.94 Paul Gauguin, *The Yellow Christ*, 1889. Oil on canvas, 36¼ x 27¾". Albright-Knox Art Gallery, Buffalo, New York
Paul Gauguin,  
*The Yellow Christ*

- Gauguin used yellow for its uplifting associations
- Although Gauguin is known to have been inspired by a woodcarving in a local chapel, his choice of color is primarily symbolic
- Yellows and browns correspond to the colors of the surrounding autumnal countryside, harvested fields, and turning leaves
- By using bright color, Gauguin creates a simple and direct emotional connection with the viewer
- While depicting death, Gauguin chose colors that express the optimism of rebirth
• “Artists’ color” is the name for the basic theory about color based on the three primary colors (red, yellow, blue)

• Using color to express feelings, artists have been exploring the human response to it for thousands of years

Conclusion