

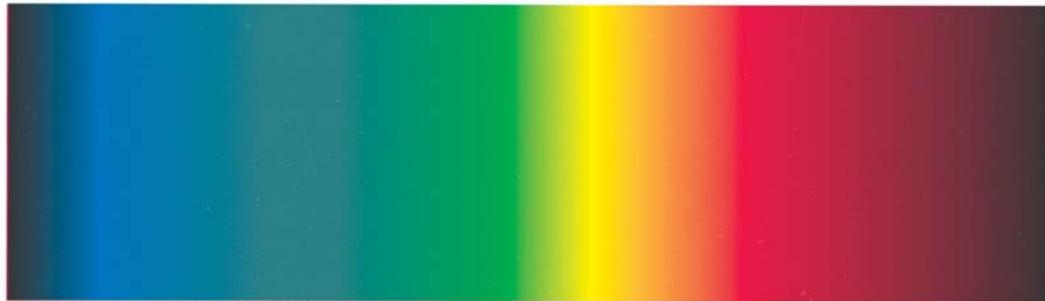
Design Principles

Color



The Essentials

- Color is a property of light.
- Objects have no color of their own, they just reflect a particular wavelength from the color spectrum.
(For example a blue object absorbs all of the wavelengths, EXCECPT for blue. The remaining wavelengths enter our eyes and this is what we see.)
- Light is made of all colors
- White reflects all the wave lengths of the color spectrum.
- Black absorbs all the wave lengths of the color spectrum.



The spectrum of colors is created by passing white light through a prism.

Color Mixing

Additive System – Color is created from projected light. (Computer art, photography, interior design...)

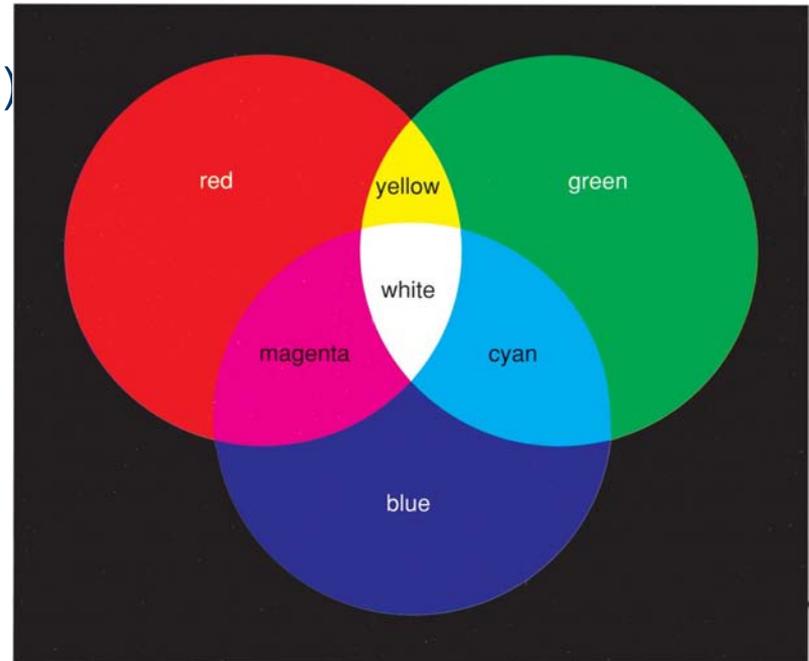
Subtractive System – Color is created from pigments, (Painting, drawing, etc...)

Color Wheel – most common organization for color

Primary Colors:

- Red
- Blue
- Yellow

(The primary colors mix to create white in an additive system.)



Colors of light mix according to the additive process.

Color Mixing

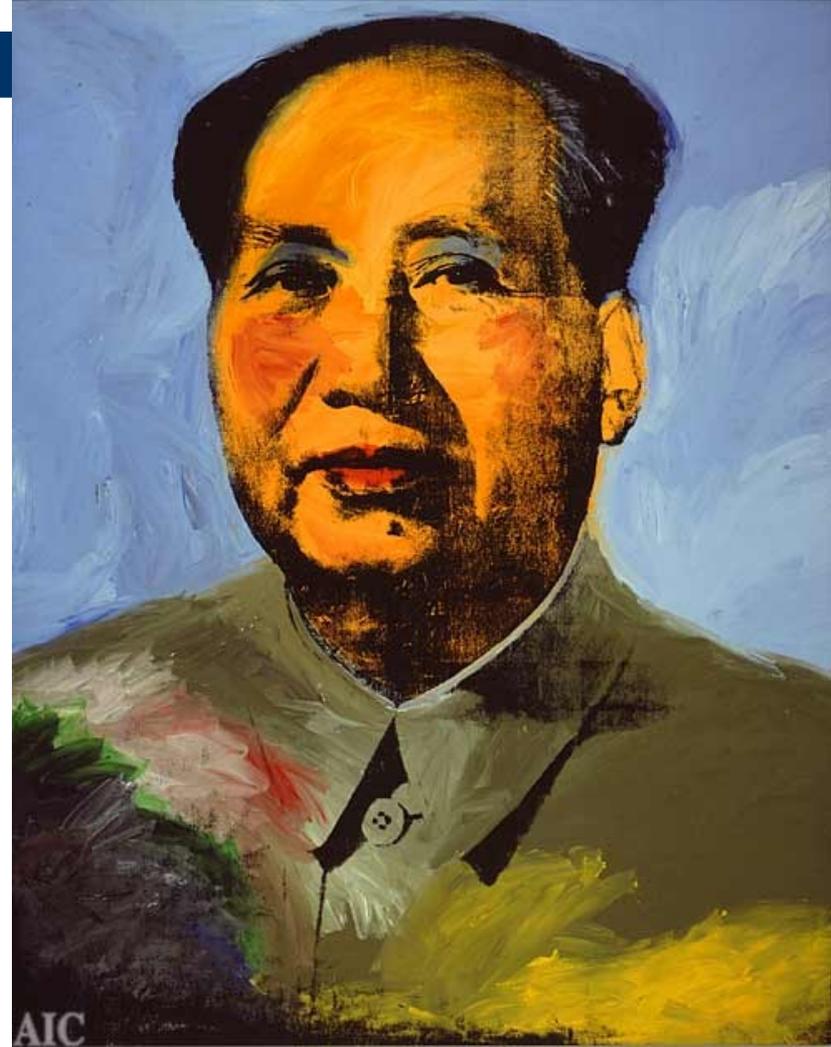
Complimentary Colors –
opposite on color wheel

- Red-Green,
- Blue-Orange,
- Yellow-Purple

Tip:

- Placing 2 complimentary colors side by side creates a brighter image.
- Mixing 2 complimentary colors creates gray

Andy Warhol - Mao



AIC

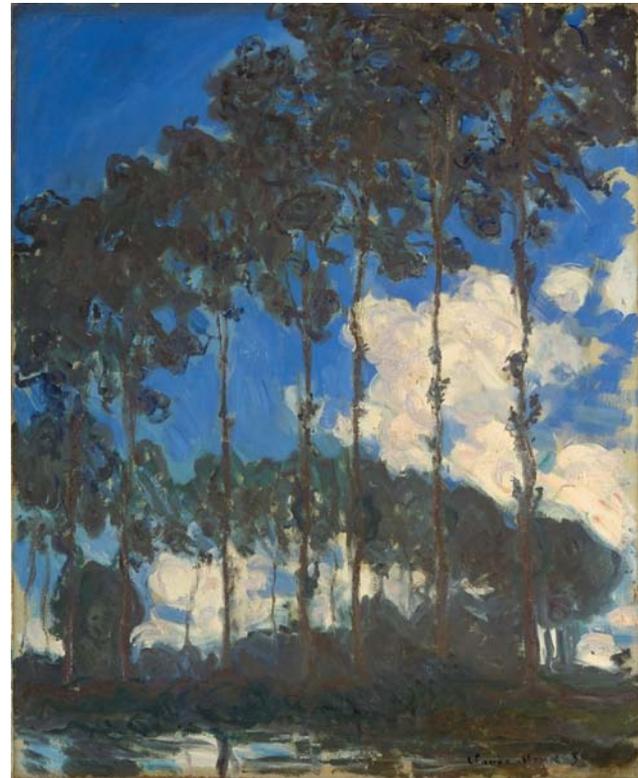
Color Characteristics

Light and Color Perception

- Color is a product of light.
- Color changes with light.
- Colors are different during different times of the day.

Color Constancy or ***Constancy Effect***

As humans we want to think of an object as being a particular color. However, objects change color with light, season, and weather.

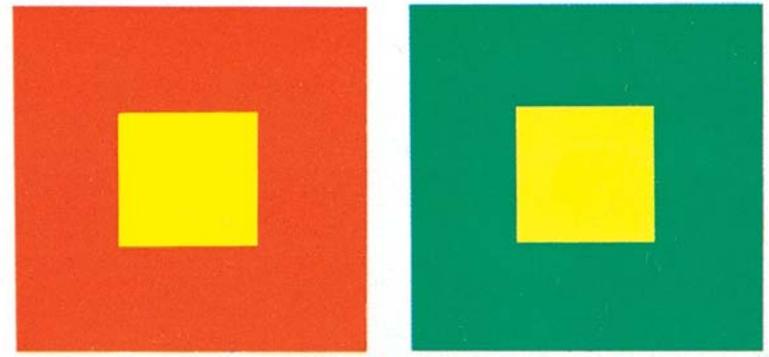
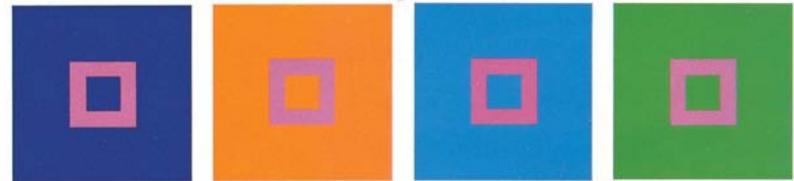


Claude Monet. Poplars. 1891. Oil on canvas, 3' 3 3/8" x 2' 1 5/8" (100 x 65 cm). Philadelphia Museum of Art. canvas, 35.9 50 cm. Museo Morandi,

Influence of Context

- “Color has a basic, instinctive, visual appeal.”
- Artist may use color mainly as an emotional element.
- Many artists use color in a strictly intuitive way.
- But artists who study color add a lot to their art.
- One of the founders of the study of color, or color theory, was Josef Albers.

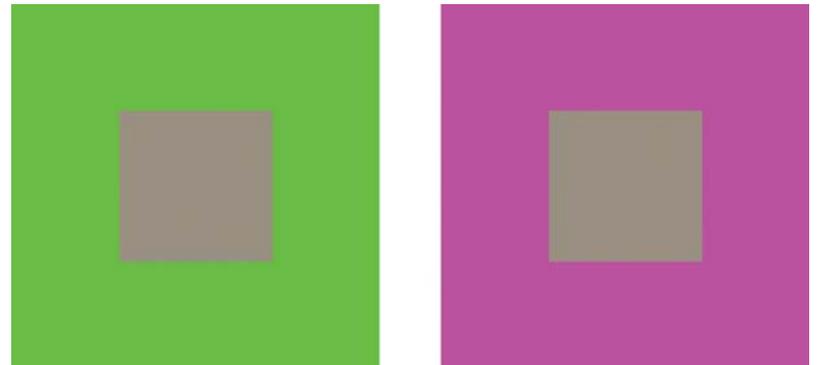
The red-purple squares, although seemingly different, are identical.



A brilliant, vibrant color will not show much change despite different surroundings.

Color and its Surroundings

- Color changes with light, and
- it also changes with its surroundings.
- Rarely do we see color by itself.



The gray sample looks different against the two background colors

The 3 Properties of Color

Hue

Value

Intensity/Complementary
Colors



Properties of Color: Hue

Hue - The name of the color

- Example: Pink, scarlet, maroon and crimson are all a hue of Red.
- There are not many hues but there are many colors.
- The same hue or color can have many different names. (It's a commercial sales thing.)



The twelve-step color wheel of Johannes Itten.

Color Wheel

The most common organization for the relationship of the basic colors is the color wheel. (It comes from the early 18th century.)

3 **Secondary Colors** - mixtures of the primary colors.

- Orange
- Green
- Violet

6 **Tertiary Colors** - mixtures of a primary and a secondary color.



Properties of Color: Value

Value - Lightness or Darkness of a hue

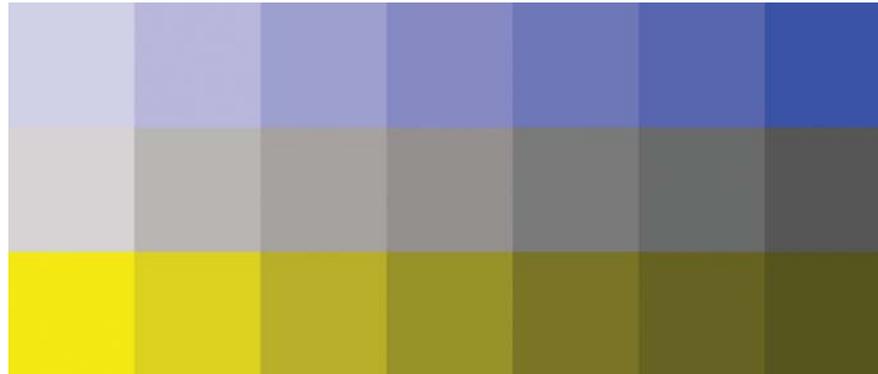
Tint - adding white to a hue

Shade - adding black to a hue

“Most people can distinguish at least 40 tints and shades of any color.”

“Normal” Color Value Differ

- “Not all the colors on the color wheel are shown at the same value.”

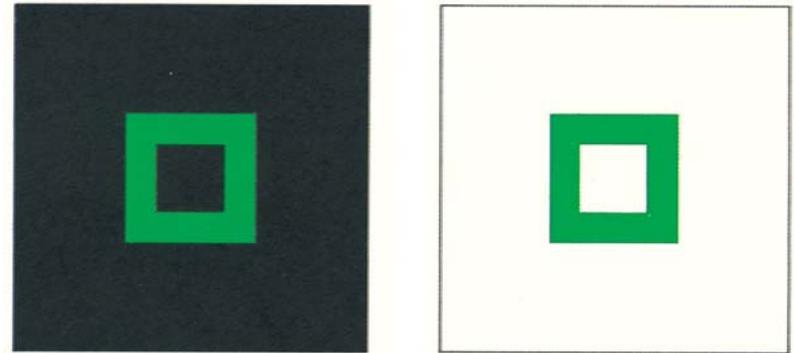


Value scales for blue, gray, and yellow with equal visual steps.

Properties of Color

Changing Color Value

- When working with paint you can thin a color by adding medium.
- You can also alter the value by mixing hues.
- Value, just like color, is changed by its surroundings.

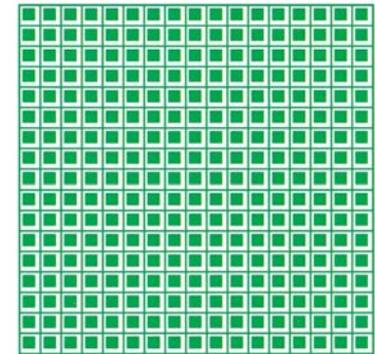
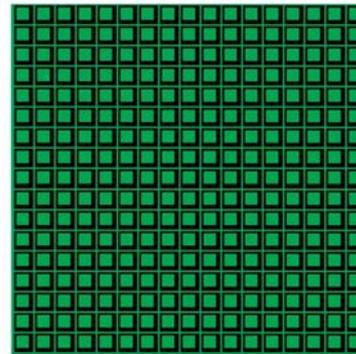


The same color will appear to change in value, depending upon the surrounding color.

Color Properties

Color Interaction

- Colors change with their context.
- Amounts and repetition are also critical factors.



The visual mixture of green with black and white.

Properties of Color: Intensity/Complementary Colors

Intensity = brightness of a color (also called ***chroma*** or saturation.)

2 ways to lower intensity:
(or make a color duller)

- Mix with Gray
- Mix with ***Complement***



New York. Edgar Degas. After the Bath, Woman Drying Herself. c.1896. Oil on canvas, 2' 11" x 3' 9 2/3" (89 x 116 cm). Philadelphia Museum of Art (Purchased,

Estate of the late George D. Widener. 1980-6-1).

Intensity/Complementary Colors

To Make Brighter use:

- ***Simultaneous contrast*** – when 2 compliments are next to each other they increase the visual brilliance of each other
- ***Afterimage effect*** – when you stare at an intense color and then look away you will see the complementary color



Casanova Table and Side Chairs. Domus Design Collection, New York.

Visual Color Mixing

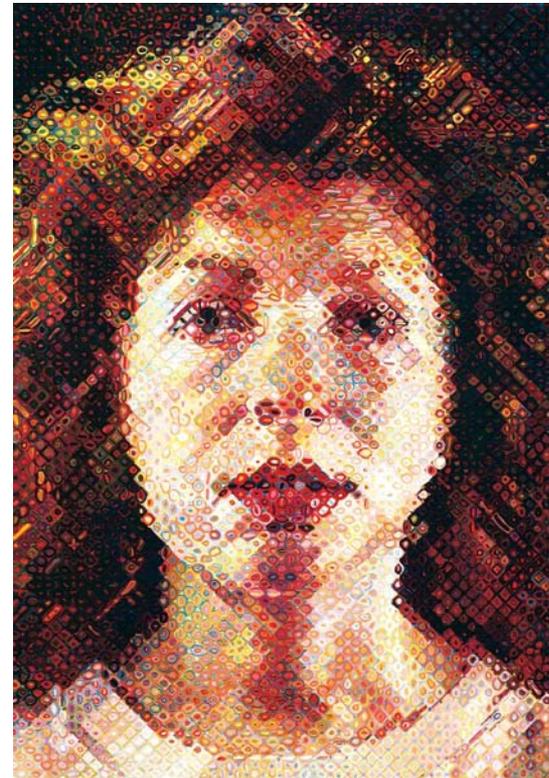
Techniques that suggest light:

- Pigment just can't reproduce the luminous and brilliant quality of light
- Its very hard to get a pure color from mixing 2 colors

Visual Color Mixing Techniques:

Visual Mixing = Optical Mixing

- Attempt to create a color by placing 2 pure colors next to each other rather than mixing them on a board.
- The viewer's eye mixes them together at a certain distance



Chuck Close. April. 1990-1991. Oil on canvas, 8' 4" x 7'. Courtesy Pace Wildenstein, New York.

Visual Mixing in Art and TV

Styles and Techniques that use Visual Mixing

- Post-Impressionist Ear Seurat and Van Gogh used Visual Mixing
- **Pointillism** – technique using small bits of color next to each other to produce a color.
- Divisionism
- TVs
- Mosaics
- Weavers
- Printing Presses
- We use this technique all the time. (Think Pixels!)

Cool/Warm Colors

Identifying colors with the senses

Warm Colors:

- Red,
 - Orange,
 - Yellow
- Warm colors advance
 - Represents – Fire, Sunlight
 - Implies – Happy energy
 - An artist many use warm and cool color relationships to create depth and volume.
 - It can also create a feeling of light.



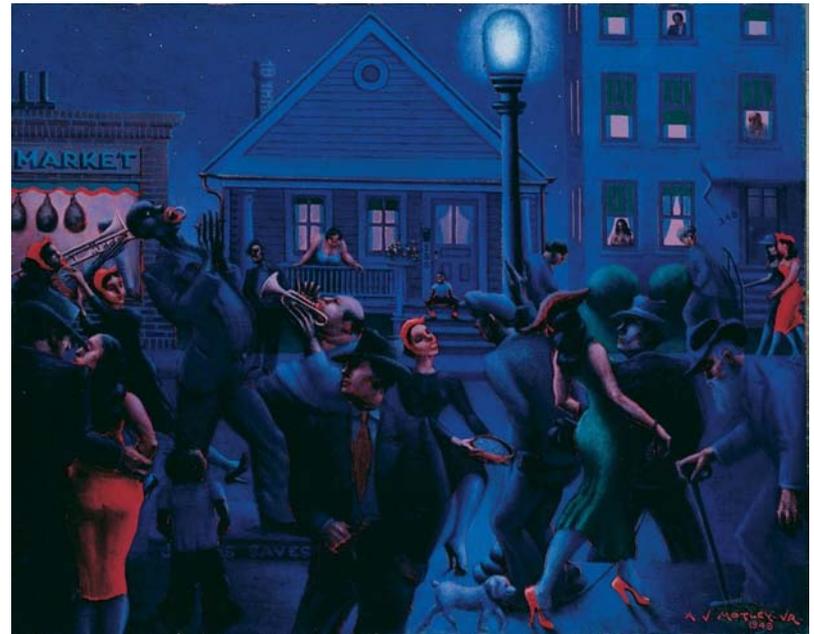
Chicago History Museum. Childe Hassam. The Breakfast Room, Winter Morning. 1911. Oil on canvas. © Worcester Art Museum, Massachusetts/The Bridgeman Art Library.

Cool/Warm Colors

Cool Colors –

- Blue,
- Green,
- Purple
- Cool colors recedes
- Represents – Sky, Water, Grass, Plants
- Implies – Sadness, Depression, Night

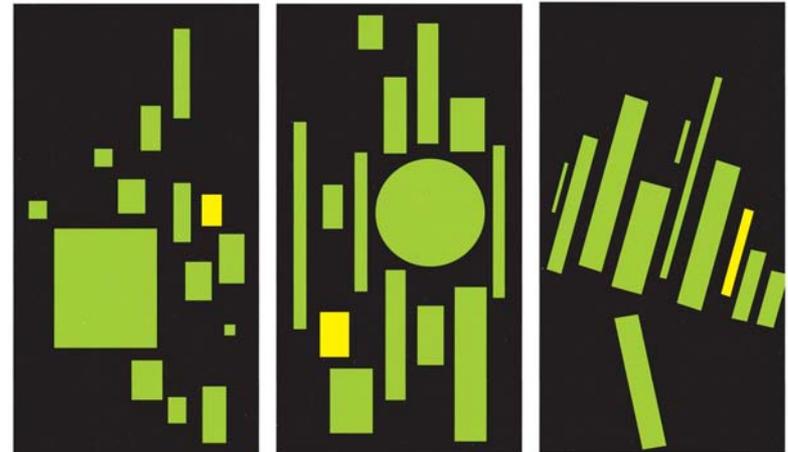
Archibald J. Motley Jr. Getting' Religion.
1948. Oil on canvas, 2' 7 7/8" x 3' 3 1/4".
Collection Archie Motley and Valerie Gerrard
Browne, Evanston, Illinois. Chicago History
Museum.



Color as Emphasis

Color Dominance

- “Areas of emphasis in a work of art create interest and naturally have been carefully planned by the artist, color can dominate and provide a focal point.”



Color is so strong a visual element that it will dominate other devices to establish emphasis.

Color as Emphasis

- Color as attention grabber
 - An odd or bright color can be used to grab attention, either in art, fashion, or advertising



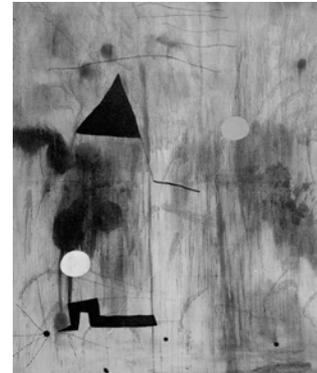
“Music.” P&G & Glide Dental Floss Campaign.
Saatchi & Saatchi, New York. Creative
Director: Tony Granger, Jan Jacobs, Leo
Premutico. Art Director: Menno Kluin.
Copywriter: Icaro Doria. Photo: Jenny van
Sommers.

Color and Balance

Achieving balance within asymmetrical composition

- Asymmetry – based on concept of using different objects on either side of the center axis
- To create visual balance, the objects must have equal weight, interest, appeal, or attraction
- Color is often used to do this.

Joan Miré. The Birth of the World. Montroig, summer 1925. Oil on canvas, 8' 2 3/4" x 6' 6 3/4" (250.8 x 200 cm). The Museum of Modern Art, New York (acquired through an anonymous fund, the Mr. and Mrs. Joseph Slifka and Armand G. Erpf funds, and by gift of the artist, 262.1972).



Color and Space

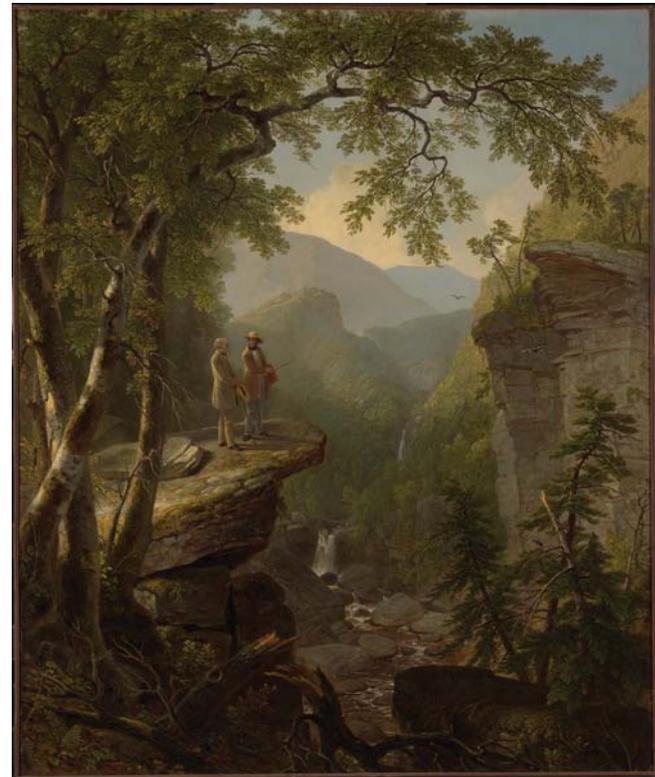
Color's Spatial Properties

- Color creates depth
- Intense, warm colors come forward, cool colors go back.

Atmospheric Perspective

As things go back into the distance dust in the air makes them fading to blue-gray.

Asher B. Durand. *Kindred Spirits*. 1849. Oil on canvas, 3' 8" x 3'. Courtesy Crystal Bridges Museum of American Art, Bentonville, Arkansas.



Color and Space

Using color to Emphasize Flatness

- Color can also be used to flatten space



David Hockney. Mulholland Drive: The Road to the Studio. 1980. Acrylic on canvas, 7' 2" x 20' 3" (218.44 x 617.22 cm). Los Angeles County Museum of Art (purchased with funds from the F. Patrick Burns Bequest).

Color Schemes

Color harmonies - a harmony or combination of particular color based on the color wheel. A color schemes.

Monochromatic - The use of just one hue in an image. (You can use black and white to add variety though.)

Analogous - A picture that uses several (often 3) colors that are right next to each other on the color wheel.

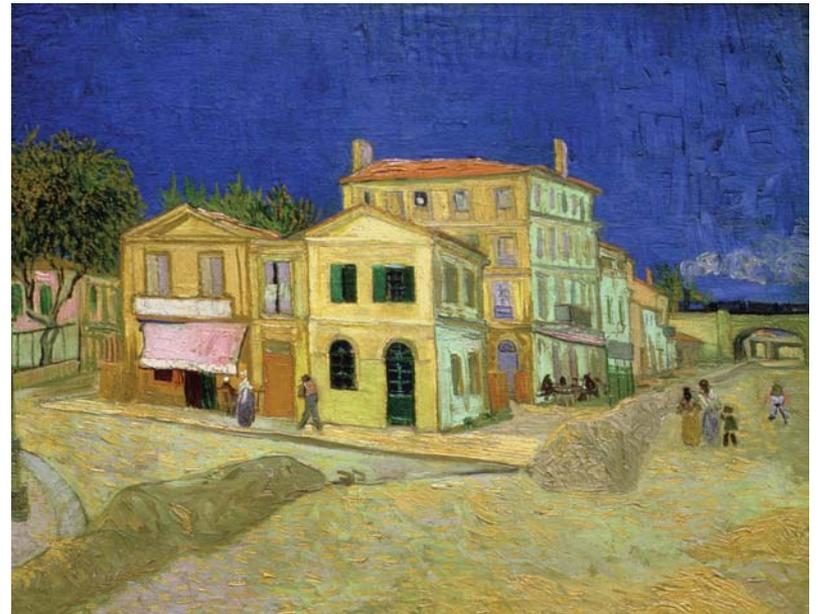


Mark Tansey. Forward Retreat. 1986. Oil on canvas, 7' 10" x 9' 8" (2.4 x 2.9 m). Collection of Eli Broad Family Foundation, Santa Monica, California. Courtesy Gagosian Gallery, New York.

Color Schemes

5 Basic Color Schemes

1. Monochromatic – uses only one hue plus shades and tints
2. Analogous – several hues that sit next to each other on a color wheel
3. Complementary – Opposite colors on the color wheel
4. Split Compliment – Uses the 2 colors on either side of the compliment
5. Triadic – Uses 3 hues equal distance on the color wheel



Vincent van Gogh. The Yellow House. 1888. Oil on canvas, 72 x 91.5 cm. © Van Gogh Museum, Amsterdam, The Netherlands/The Bridgeman Art Library.

Planning Color Schemes



- The use of deliberate color schemes is most common in interiors, posters, and packaging.
- But, knowing these harmonies can help both painters and designers consciously to plan the visual effects they want a finished piece to have.

Jan Vermeer. *Girl with a Pearl Earring*. c. 1665-1666. Oil on canvas, 1' 5 1/2" x 1' 3 3/8" (44.5 x 39 cm). Royal Cabinet of Paintings, Mauritshuis, The Hague.



Color Discord and Vibrating Colors

Unexpected Combinations

- Color Discord – opposite of color harmony.
- Can be disturbing.
- They do not balance each other.
- Mild discord can be exciting or eye-catching.

Wolf Kahn. Color/Tree Symphony. 1994. Oil on canvas, 4' 3 1/2" x 4' x 8 1/2". Grace Borgenicht Gallery, New York. Art © Estate of Wolf Kahn/Licensed by VAGA, New York, New York.



Color Discord and Vibrating Colors

- Using Discord to add Interest
 - Discord – implies immediate negative impression
 - The past certain color combinations were not done, however now color coordinating is much more free

Color Discord and Vibrating Colors

Colors in Conflict

- Certain color pairings are almost difficult to look at.
- Our eyes experience conflict trying to look at them
- They look as though they are vibrating
- ***Vibrating Colors*** – Colors that create a flickering effect at their border. This effect is usually dependent on an equal value relationship and strong hue contrast



Annie Mae Young. Quilt. c. 1965. Cotton stiff material: corduroy sheeting, polyester dress and pants material, wool, 71 7 1/2 x 61 9 1/2. By permission of the artist.

Color Use

There are 3 basic ways to use color in painting.

1. **Local Color (or Objective)**- painting the object the color that it is in normal daylight.
2. **Optical Color** - Depicting an objects color as it might be seen under various or different light.
3. **Subjective Color** - Is the arbitrary use of color, where the artist picks colors based on design, aesthetics, or emotional response.

(*Heightened color* is the use of color that is intensified or exaggerated.)



Paul Gauguin. Allés et Venues, Martinique (Coming and Going). 1887. Oil on canvas, 2' 4 1/2" x 3' 1/4" (72.5 x 92 cm). ↗ Carmen Thyssen-Bornemisza Collection on loan to the Museo Thyssen-Bornemisza (CTB.1979.88).

Color Use

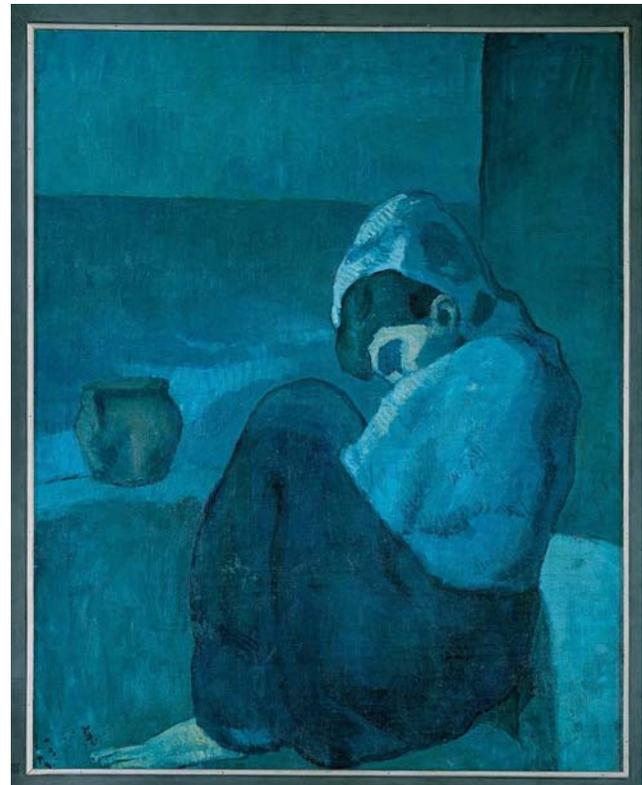
- Arbitrary – Design reasons, aesthetics, emotional reactions
- Pure Arbitrary color is often seen in 20th Century Painting
- Heightened Color is intensification an exaggeration of the color artist may have seen

Emotional Color

Emotional Color - The use of color to create a reaction or get a response.

Warm colors = Warm, happy

Cold Colors = Melancholy and depression



Pablo Picasso. Crouching Woman. 1902. Oil on canvas, 2' 11" x 2' 4" (90 x 71 cm). Staatsgalerie, Stuttgart.

Emotional Color

Themes and Context

- Artist often use a color to support enhance, and add emotion to the subject or story of their painting or artwork.



Leon Golub. *Mercenaries IV*. 1980. Acrylic on linen, 10' x 19' 2 1/2" (3 x 6 m). Private collection, courtesy of the artist. Art © Estate of Leon Golub/Licensed by VAGA, New York, New York. Courtesy Ronald Feldman Fine Arts.

Color Symbolism

- Conceptual Qualities of Color
 - Color Can represent a concept or idea like sin, greed, cowardice, etc....

Color Symbolism

Color meaning varies between countries and between times.

- Mourning
 - US-black
 - India-white
 - Turkey-Violet
 - Ethiopia-Brown
 - Burma-Yellow
- Brides
 - US-White
 - Hindu India-Yellow
 - China-Red
- Royalty
 - European & Egyptians-purple
 - China-Yellow
 - Rome-Red



Jusepe de Ribera. The Holy Family with Saints Anne and Catherine of Alexandria. 1648. Oil on canvas, 6' 10 1/2" x 5' 3/4" (209.6 x 154.3 cm). The Metropolitan Museum of Art, Samuel D. Lee Fund, 1934 (34.73).

Color Symbolism

Symbolic Color Today

- Color symbolism is less recognized or important than in the past.
- Now we can make color mean what we want it to.
- **Color Symbolism** – employing color to signify human character traits or concepts
- Really strong for some things like Red, White, and Blue for patriotism.



Lee Fund, 1934 (34.73). David Hollenbach. Client: The American Prospect. "The Judge as Lynch Mob," Communication Arts Illustration Annual 43 (July 2002), p. 51.

Color VS Value: A Continuing Debate

Do Color and value work together or at cross-purpose?



Color VS Value

- Artists Speak about Color
 - Artist historically emphasize one or the other
 - Some artists believe that values are what matter, other like the Fauves and the Impressionists believe that color is the essence of painting

Color VS Value

Defining New Periods

- Different Eras have put different emphasis on the importance of value and color

Relationship between Color and Value

- The reproduction of an artwork as black and white can help to distinguish how visible it will be for someone who is colorblind or has poor eyesite. They will be better able to distinguish high value changes.



Henri Matisse. © Copyright. The Piano Lesson. Issy-les-Moulineaux. Late summer 1916. Oil on canvas, 8' 1/2" x 6 11 3/4". Mrs. Simon Guggenheim Fund (125.1946). © Succession H. Matisse, Paris/ARS, New York.