Color and Value

Week 3
Emphasis: Using A Full Range of Values

Hue, or What's In a Name, Anyway?

Hue is one of the three properties of color, along with value (sometimes called luminosity) and intensity (or chroma or saturation). Hue is simply the NAME of a color, like red, yellow or blue. As you know, a great part of learning to paint or draw in color involves learning to REALLY SEE color, as opposed to letting your left brain tell you what you think you see, or what you ought to see. And once you get to where you can see color accurately, it becomes helpful if you also learn to name it accurately. That means giving it a descriptive name that includes all three properties—value, intensity and hue. For example, you might describe Hooker's green as a "medium dark, low intensity yellow green", or the color of a ripe strawberry as a "mid value, mid intensity, redorange". When you start naming your colors in this way, it helps you continue to differentiate small biases in hue, value and intensity, and that in turn can help you mix better colors.

All of the colors we mix, whether in oil, watercolor or some other medium are subtractive color mixtures, because we are working with pigments rather than light, and that means that the more we combine different colors, the more we affect hue, value and intensity, and the more we make duller, darker, less pure colors.

How Light Affects Color

We all know that without light, there is no color. But we often don't translate the effects light has on color into our paintings. We're prone to painting drab, dense shadows, and sunlit areas as colorless "white", and missing what surrounding objects have on our colors as well. Train yourself to just turn off your brain and really see color!

While the objects on the table receive some daylight in both of the photos on the next page, look what the addition of the yellow incandescent light from the table lamp does to the colors of the leaves, tablecloth, and pottery.

Describe (in terms of value, intensity and hue) the color of the two leaves circled in magenta.

Exercise 1:

Paint a small study of a still life setup illuminated by natural light only. Spend no more than 30 minutes on this study.

Exercise 2:

Then, close blinds and illuminate the same still life with an incandescent or colored light source. Paint a second study, spending no more than 30 minutes on it.

How does the color of light illuminating your subject change the local hues of the objects? How does it change the shadow colors?

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Light and Shadow

Painting convincing sunlight and shadows depends completely on using a full range of values from light (white paper) to dark (near black), and it depends particularly on the *amount of contrast* present between the sunlit areas and those in shadow. How much contrast you use will be determined by the strength of the light on your subject (i.e. a foggy, rainy, overcast day doesn't have nearly the amount of value contrast that a brilliant, sunny day does, and a sunny day in Arizona isn't the same as a sunny day in Ireland.)

Night scenes are created through manipulating not only value and intensity of color, but through dominance. That is, the night scene may be predominantly warm or cool darks to mid-darks, but punctuated by a small amount of intense lights (windows in houses, street lamps, stars, moon, etc.)

Excerpts from *The Art of Color*
by Johannes Itten:

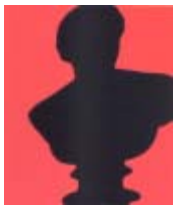


Figure 143

In 1944, I had occasion to demonstrate the problem of colored shadows in connection with an exhibition at the Zurich Museum of Arts and Crafts. A white object was illuminated, in daylight, with a red light; a green shadow resulted. Green light produced a red shadow, yellow light a violet shadow, and violet light a yellow shadow.

In daylight, each colored light produced a shadow of it's complementary color. I asked Hans Finslet, the photographer, to take pictures of this phenomenon. Color photos showed that the colored shadows were really present, and not due simply to simultaneous contrast. All the mixtures of colors in such experiments correspond to additive color systheses, being mixtures of LIGHT rather than of pigments.

In further experiments, the following surprising results were obtained:
In the absence of daylight, illuminating an object with colored light (red, blue or green) produced a black shadow. See the red light result in Figure 143.

Figure 144

In the absence of daylight, using two colored light sources - redorage and bluegreen - the redorange light produced bluegreen shadows and the bluegreen light produced redorange shadows. Where the shadows intersected/overlapped, the shadow was black, and where the light sources intermixed, the color was redviolet/lavender {Figure 144].

Figure 145

When three colored lights were used - redorange, green, and blue green, the result was that as shown in Figure 145. The red orange light produced a bluegreen shadow, the green light made a lavender shadow and the bluegreen light made a yellow shadow. The intersection of the three shadows was black. The mixture of the three lights produced white. This is the essence of additive (light) versus subtractive (pigment) color mixing.

In the painting at left(top), done by a student in one of Tom Lynch's workshops, the goal was to establish a feeling of light filtering through the trees heavy with Spanish moss, and illuminating the arched gate. Lack of a full range of values kept the painting from accomplishing the artist's goal. After Mr. Lynch "worked on" the student painting, increasing the value contrast particularly around the gate (the focal area), the painting was much stronger (bottom left).

In the other example (right), the feeling of a sunlit day is accomplished by using a full range of values, from the near black in the windows and building foundation, to the white paper on the sunlit side of the house.

The Creative Process

by Jack Hines with Jessica Zemsky

The Effects of Light on Color

The science of light and color is simplified in this laymen's guide to how they work together.

For centuries artists produced beautiful, viable art without a thorough understanding of light and color. Pre-Renaissance art in Europe, Persia and India, as well as Chinese and Japanese painting are all examples of styles based solely on the concepts of line, pattern, and color, without any utilization of the demonstrable effects of light.

The Italian Renaissance push toward naturalistic imagery—the "window onto the world" effect—began with Leonardo da Vinci (1452–1519), who first explored the use of "chiaroscuro," i.e. the softening of edges, diffusion of color, and light and dark effects in shadows. A fuller exploitation of light and color began with two benchmark artists who followed. The Italian painter Cavaraggio (1573–1610) carried the effects of strong spotlighting on his subjects to a dramatic extreme. Sidelights, highlights, cast shadows and reflected light dominated his paintings and revolutionized the approaches of those artists who learned from Caravaggio's example. The second benchmark came in the work of French painter Claude Monet (1840–1926) and the Impressionists. They moved away from a dependence upon light and dark values to suggest light, and toward color juxtapositions and paint application which excited the eye into seeing an "impression" of light through its effect on color. They also taught us that light and color are inseparable.

Today, when we look at a painting, we generally become aware of the color first, then the existence of light. How does the artist make it happen? Let's explore this fascinating aspect of painting.

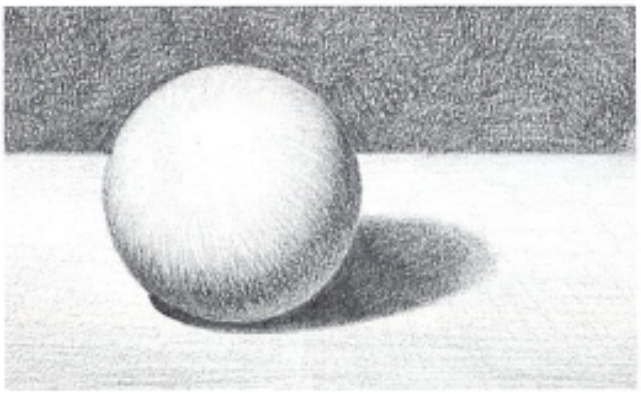
Creating the illusion of dimension on a flat surface is complex. Once the foundation of a solid drawing is down, creation of the illusion is under way. But the drawn objects in a picture must also be given mass, dimension and a believable atmosphere in which to exist. To achieve that goal, light—the catalytic companion of color—is brought into the equation.

Color cannot exist without light. Light rays bouncing off pigment activate our perception of color. The degree of light and shadow (or what are called "values" in art) suggests form in a painting. Values help the artist imitate the stereoptic effect of depth perception. And since it is light which allows us to see both form and color, we will deal with it first.

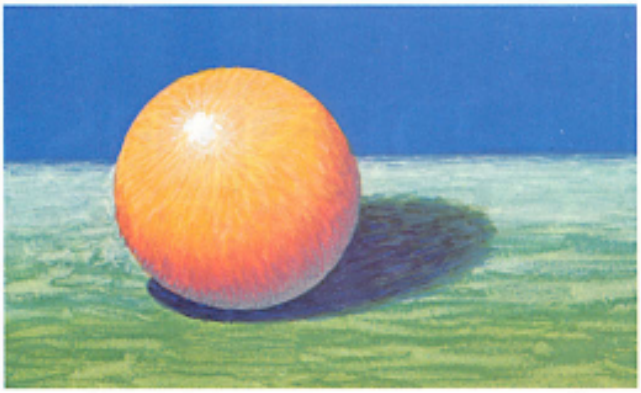
Our primary source of light is the sun. It is a simple source, uncontaminated by secondary light directions such as those encountered in a room filled with artificial light sources, like lamps and ceiling fixtures. Light shining on a dimensional object, such as a sphere, produces the five value effects illustrated in figure 1.

Highlight (or the lightest value) appears at the point on the object most directly facing the light source. *Light retreat* occurs on surfaces which, though in the light, exist at oblique angles to the source. *Core of shadow* appears in those areas which are parallel to the light direction and therefore receive the least light. *Reflected light* is on that area of the object which receives no direct light but is illuminated by light bouncing off adjoining surfaces. (In this case, light reflecting from the table surface bounces up to illuminate the underside of the sphere.) *Cast shadow* is created by the interruption of light by the object. It appears on adjacent lighted surfaces and describes the shape of the surface on which it rests. The cast shadow is the darkest value at its dense and sharp-edged beginning point, but it lightens and softens as it retreats from that point.

Dealing with the same setting in color will clarify the artistic problem of handling light and color together. In figure 2 we have a warm, sunny light source on a sphere.



1

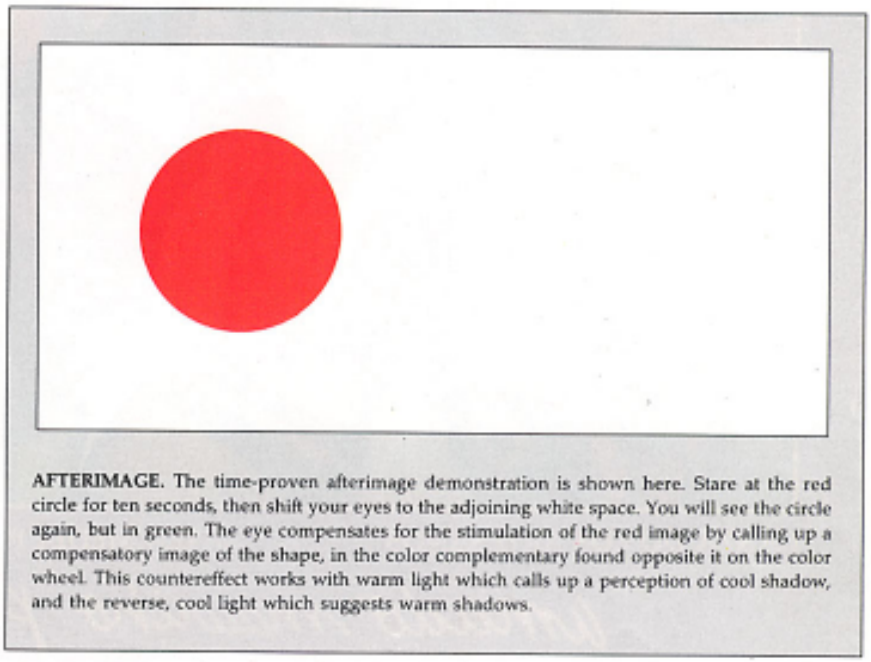


2

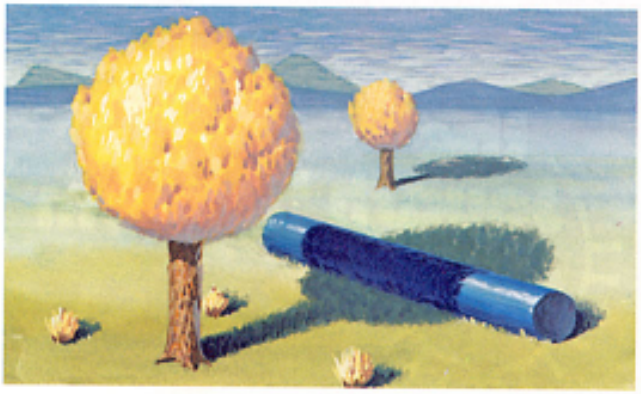
The local color of the objects (yellow sphere and green base) shows the influence of this warm light source in the highlight and light retreat areas. In the core of the shadow, the color is darker and cooler. This coolness results from the eye reacting to a strong optical stimulus (warm light) by producing a cool countereffect in the shadows *(see sidebar)*.

In the color version, the warm light loses its intensity and heat as it traverses the light retreat area into the core of shadow. There it takes on the cool phase of the light/dark value structure. Likewise, the surface on which the sphere stands is warm in its lighted areas, but cool where the shadow casts upon it.

Light and dark, warm and cool—how they operate in a simple landscape with a tree and a reclining cylindrical form in its shade and another distant tree leading to a far horizon is shown in figure 3 where the elements are deliberately simplified. The trees are analogous to the sphere seen in the earlier demonstrations. The shadow cast onto the cylinder by the tree describes the rounded shape. Note that color, as well as object size, differs as we optically travel to the horizon. Linear perspective accounts for the size difference. Atmospheric perspective—the degree that the atmosphere is inhabited by moisture, dust particles, smoke or other matter—leads to color changes and neutralized contrasts of light and dark. Manipulating this latter effect allows the artist to depict clear atmosphere, hazy conditions or even heavy fog. The more complex a picture becomes, of course, the more involved the problem-solving becomes. Consistency in approaching all the lit elements of a scene or object is crucial to naturalistic painting.



AFTERIMAGE. The time-proven afterimage demonstration is shown here. Stare at the red circle for ten seconds, then shift your eyes to the adjoining white space. You will see the circle again, but in green. The eye compensates for the stimulation of the red image by calling up a compensatory image of the shape, in the color complementary found opposite it on the color wheel. This countereffect works with warm light which calls up a perception of cool shadow, and the reverse, cool light which suggests warm shadows.



3

Knowledge of the instruments of art—light and color, drawing, composition and painting techniques—is the basis upon which an artist builds his work. Each individual adds to these basics a personal approach which brings forth unique works of art. Take a careful look at the paintings on your walls, reproduced in your books or, better yet, in the pages of this issue of ***Southwest Art***. Determine if the artist's goal was a naturalistic suggestion of light; if so, then look for the effects described here. You will find a new appreciation of artists who handle color and light well ... and, perhaps, a new way of evaluating paintings that "just don't seem to have any atmosphere."

SWA

Color and Value

Color schemes as they relate to contrast

While you will choose a color scheme or palette of colors depending on your subject, you may also deliberately choose a group of colors because of their potential for setting up a particular range of value contrasts.

The diagrams at the right illustrate how some common color schemes (complementary, analagous, etc.) relate to a value contrast scale. Keeping these inherent value contrasts in mind as you choose colors for your paintings can open up new possibilities for painting ordinary subject matter.

Assignment:

At home, find and set up one to three WHITE objects on a white cloth. Set them up near a window where they will get daylight only. *Paint the colors you see*.

After dark, use a desk lamp or some other form of artificial light to illuminate the set up you painted earlier. Again, *paint the colors you see*.

Tip:
Use a 3" x 5" piece of mid value, neutral color gray matboard or cardboard, or paint a piece of paper this size a neutral mid value gray. Cut a small (1/4" to 1/2" diameter) hole in the card abount an inch down from the top and in from the sides. Hold this card at arm's length and look at the various parts of your setup and PAINT THE COLORS YOU SEE through the hole in the card. The neutral gray will help you see the colors more accurately.

Optional Assignment:

Choose one of the color schemes at the right (triad, complement, etc.) and paint your white objects using your new, arbitrary colors.