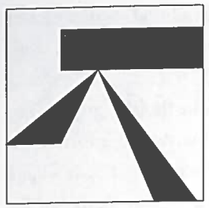
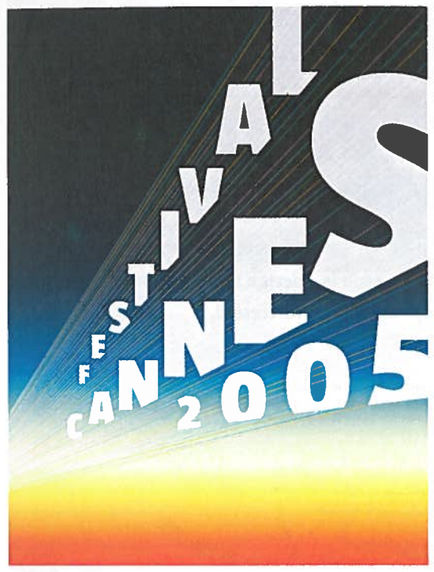


6.15 Two lines seem to reach toward one vanishing point (one-point perspective).

6.16 The sides of the cube converge toward two outer vanishing points (two-point perspective).



6.17 PHILIPPE APELOIG. Cannes Festival poster. Projected type creates the illusion of depth and an appealing dramatic effect.

6.18 LORENZO ROMERO. Rome & Gold Creative. Logo for Shepherd's School.

6.19 HENRY BRIMMER. Exhibit graphics for an alumni exhibition titled *Design Experiences*.

Depth

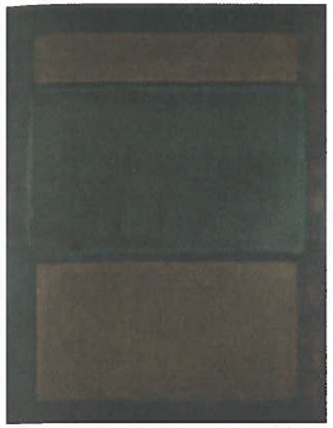
Visual perspective is an effective way of creating the illusion of **depth**—giving the viewer the perception of physical space. Developed during the time of the Renaissance, the theory of vanishing points changed the way we perceive three-dimensional space on a two-dimensional plane. Figure 6.15 demonstrates **one-point perspective** using two lines (on two axes) that reach toward one vanishing point. **Two-point perspective** is a little more complex visually. It uses two vanishing points instead of one, creating an image that is a little closer to the way we actually perceive distance on the curved earth (Figure 6.16).

The Cannes Festival poster by Philippe Apeloig is a good example of how type itself can be used with one-point perspective (Figure 6.17). The line tracks reach into the far distance, with the words getting smaller as they move into space. The design serves as an announcement for the festival, inviting viewers to experience the projected light in a film theater setting. In this image, content and form meet beautifully in an almost poetic way, with all the components working together harmoniously.

The iconic representation of books, created by Lorenzo Romero, serves as a compelling logo for Shepherd's School (Figure 6.18). Romero used two stacked books to create a three-dimensional effect of spatial depth. Two-point perspective gives the covers an added sense of dimension—the layering and perspective angles trick the eye into believing it is seeing physical depth. But what makes this image especially clever is the resulting letter S (for "Shepherd"). Of course, objects can be stacked front to back, as well as top to bottom, to create an illusion of space.

Even when three-dimensional space is a part of a design problem, depth and perspective can be manipulated to make that space more active, as you can see in the exhibit graphics for *Designing Experiences* created by Henry Brimmer (Figure 6.19). Here Brimmer played with the junction of two walls to humorously engage the audience. The experience of interacting with the lettering as it bends around the corner further illustrates the experiential point of the show. It is an ironic twist and an inventive use of typography in the third dimension.

In addition, **scale** (the relative size, extent, or degree of elements within a design composition) can also generate a sense of depth. The airplanes presented in varying scales in Figure 6.14 give viewers an idea of spatial depth. The Speakout "About Rudolf Arnheim" by Gusty Lange offers further understanding on the visual perception of depth.



6.20 MARK ROTHKO. *No. 14 (Brown over Dark)*. 1963.

Color

The artist Mark Rothko (1903–1970) said that the colors he used in his paintings were performers. In the work *No. 14 (Brown over Dark)* you can begin to see what he meant (Figure 6.20). Using color as the primary element of his work, Rothko allows color to define the painting, creating a sense of space, mood, dimension, form, and content. Rothko's portals, as he called them, are formal and aesthetic problems solved beautifully through paint and color.

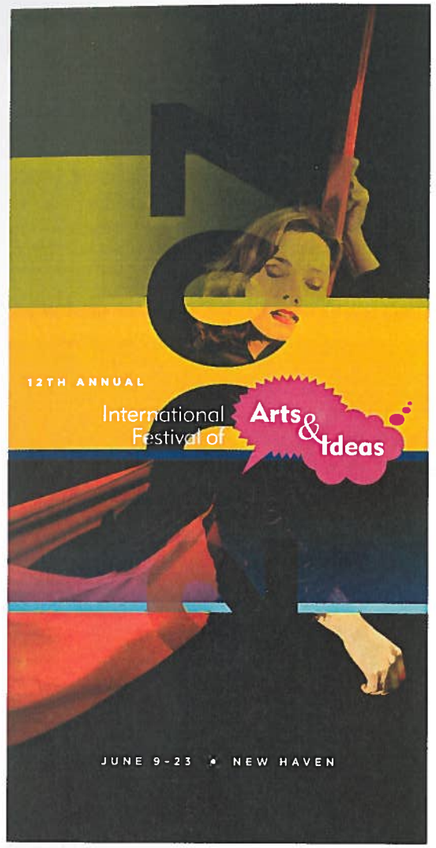
> *Colours are the deeds of light, its deeds and sufferings.*
>
> —Johann Wolfgang von Goethe, Theory of Colour (1810)

SPEAKOUT: **About Rudolf Arnheim** by Gusty Lange, professor, Graduate Communications Design, Pratt Institute

In 1954 Rudolf Arnheim published the groundbreaking book *Art and Visual Perception.* Today, it is the basis for visual thinkers to understand how form and space work together. All fields of visual expression have benefitted because Arnheim gave us tools for critically understanding visual thinking, making our work certainly more valid to our audience.

Form is the result of visual expression. Rudolf Arnheim succinctly addresses this idea using a simple but profound quote by the painter, Ben Shahn: "Form is the visible shape of content." This set the stage for Arnheim's theory that the essence of form is found in the unseen, and more in how we perceive it to be. For example, the illusion of depth on a two-dimensional surface is made by using the tools of overlapping, foreshortening, perspective, and more. Arnheim goes even further, suggesting that three-dimensional illusion is interpreted by the perceiver through past experiences, cultural roots, inner emotions, and the senses. So we can say that visual perception involves the essence of the whole (the gestalt).

Form is what takes shape when we design. But when we understand form beyond what literally meets the eye, we can move past the boundaries of physical shape and toward the symbolic and metaphorical edges of the unconscious. Only then does form become a powerful tool in defining our work as visual communicators.



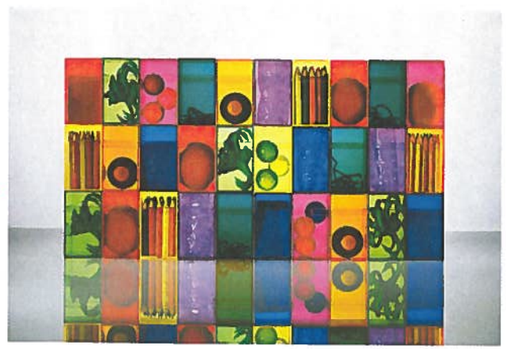
6.21 ANITA MERK, FLYLEAF CREATIVE. Art & Ideas banner design.

6.22 The palette of colors shown here were used in Figure 6.21. Similar color values (brightness) coordinate as a system to help bring unity to the design.

In the design by Anita Merk for the poster of the International Festival of Arts & Ideas (Figure 6.21), the elements include words, images, and shapes, all within a specific color palette (Figure 6.22). Their elegant fusion tells a story and creates a formal unity, allowing the information to peek through, hinting and teasing the viewer about the event's performances and panel discussions.

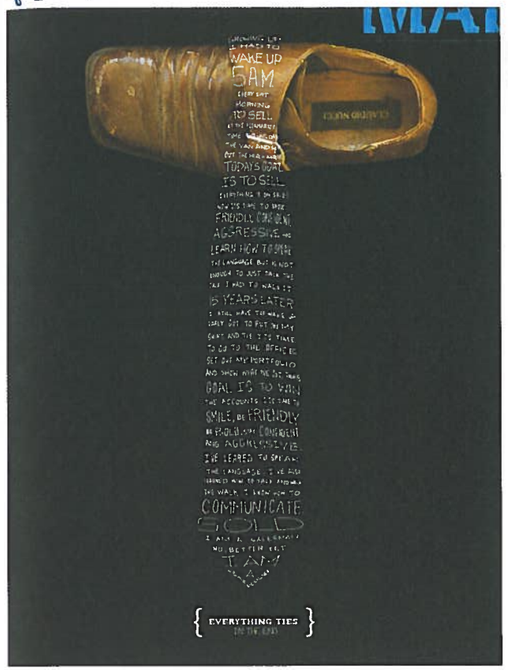
In a fund-raising kit for the National Institute for Play, Jason Schulte used colorful objects to capture the attention of potential donors (Figure 6.23). The design piques interest through its use of bright colors, sleek transparent boxes, and fun items that show how life can be made more energized and pleasurable through the benefit of play.

Color is a most active visual component in design. Yellow expands outward and forward toward us, while blue recedes, drawing us in. Artist Wassily Kandinsky (1866–1944) described it well when he wrote "Keen lemon-yellow hurts the eye in time as a prolonged and shrill trumpet-note in the ear, and the gazer turns away to seek relief in blue or green." Color, alone or in combination with other colors or other principles and elements, can bring contrast and unity. Colors can vibrate and move, create unity and discord. Artists can manipulate color with the rationality of a scientist or with irrationality based on emotion. Arbitrary use of color can destroy an otherwise fine design, while truly brilliant use of color can make a design soar.



6.23 OFFICE, JASON SCHULTE DESIGN. Views of the fund-raising kit for the National Institute for Play.

View a Closer Look for *Everything Ties* on **myartslab.com**

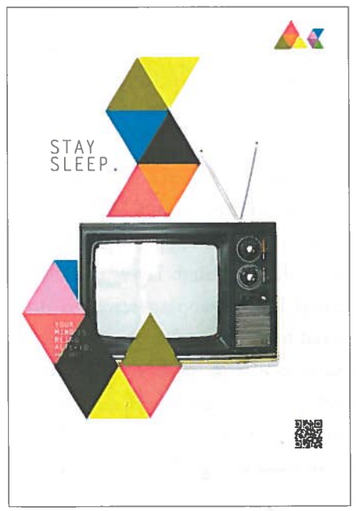


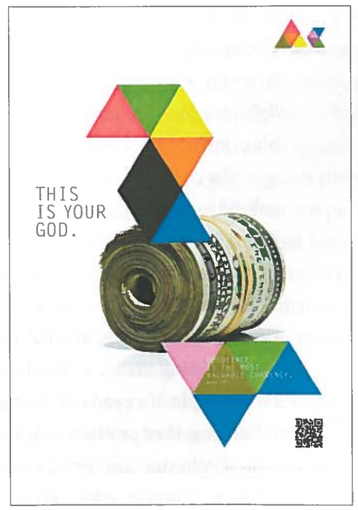
6.24 ANDY MATHURIN. Design titled *Everything Ties* explaining how a past experience (working at a flea market) affects how he sells himself as a graphic designer today.

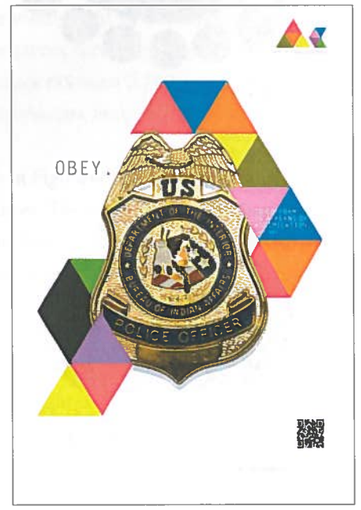
Nobody cares what your favorite color is. Color isn't about preference; strategic use of color is part instinct, part skill, and a great deal of science. Take, for example, a design by Andy Mathurin, Everything Ties (Figure 6.24). The piece describes how the artist's past experience (of working at a flea market) affects how he sells himself as a graphic designer today. There is a limited amount of color, which he used with clear intent: the shoe he used is old and worn, but bright enough to set itself off from the solid black background; white hand-drawn type reverses out, not only to give the design a personal feel but also to create the shape of a white tie; and the blue stenciled type (the first three letters of the designer's last name) integrates with the shoe by having the same level of brightness.

Color should be part of the original design concept, not something added at the end of the process. A good example of this approach is seen in a proposed advertising campaign by Tatianna Holiday-Nowden for an arts organization devoted to raising America's social consciousness (Figure 6.25). A set of colored triangles create the Art + Consciousness (AC) monogram. The triangles then take on a life of their own as they form into shapes and wrap around iconic photographs of media, money, and authority. Each triangle of color interacts with adjacent colors to form a unique spectrum.

▸ ***In Practice:*** *When making your choices, remember that color doesn't exist as an absolute; it always interacts with the adjacent colors.*





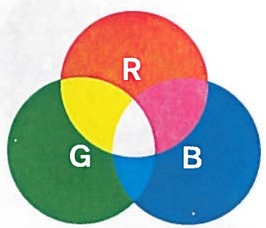


6.25 TATIANNA HOLIDAY-NOWDEN. Proposed advertising campaign for an arts organization devoted to raising America's social consciousness.

6.26 A prism refracts light, which appears to be white, into a spectrum of colors based on long and short wavelengths.

6.27 A value chart from white to black. A 50 percent strip appears to change from darker to lighter depending on which gray value it is next to.

6.28 The color wheel bends the spectrum into a circular relationship of opposite, or complementary colors.



6.29 RGB (red, green, blue) is an additive process of color where an electronic source adds each to an otherwise black screen.

Color Systems

An explanation of color systems begins with the prism—a triangular piece of glass. White light enters the prism and produces a spectrum of colors based on long and short wavelengths (Figure 6.26). Red has the longest wavelength, violet the shortest. The colors blend into each other, with red, orange, yellow, green, blue, and violet as the most distinguishable bands. **Color** is defined in terms of three attributes: **hue** (for example, red, orange, yellow, green, blue, or purple), **value** (light versus dark, or white versus black; see the value scale, Figure 6.27), and **saturation** (intense versus dull).

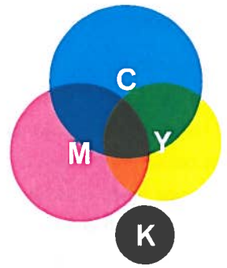
The color wheel bends the color spectrum into a circle, placing the colors in a specific, standard arrangement or relationship (Figure 6.28). Colors that sit adjacent to one another on the color wheel are called **analogous colors,** and colors that sit opposite on the wheel are called **complementary colors.** When placed next to one another, complementary colors of the same value will appear either to vibrate or to blend. In theory, equal parts of complementary colors mixed together will produce gray. A good designer can use all these properties to great advantage.

There are big differences in the way color functions as pigment (such as paint), as light (such as on a monitor), and as ink (such as in printing). **Primary colors** (red, blue, and yellow) are—identified as such because they cannot be obtained by mixing any other colors when using pigments such as paint. When two primary colors of pigment are mixed, they produce **secondary colors** (purple, orange, and green).

The color we see on computer monitors and television screens, however, functions differently from pigments because those screens are backlit with light. In contrast to pigments, red, green, and blue are the three main hues that produce all the other colors on the screen (Figure 6.29). Combinations of these colors produce resulting hues that are different from those of pigments. For example, when green is added to red using light, it produces yellow. All electronic devices use the **RGB** (red, green, blue) system to produce color images.

In contrast, printed color, or process color, usually uses four main colors: cyan, magenta, yellow, and black, referred to as **CMYK** (Figure 6.30). Because there is no backlighting on a piece of paper, the inks must be transparent, allowing their hues to show through layers and blend. Using this method, colors are created by overlapping screened dots, known as **halftones,** in what is referred to as **four-color process.** Effects of combining hues can produce results similar to those using pigments. For example, if a cyan dot overlaps yellow, it produces green; magenta and yellow together produce red, and so on (Figure 6.31).

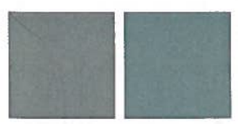
Halftones are predominately printed using the **offset printing** method, a lithographic process in which an inked image is transferred



6.30 CMYK (cyan, magenta, yellow, black) is a subtractive process of color where each printed ink reduces the light that would be reflected from white paper. The overlay of CMY makes black, but the addition of K (black) is needed to bring density to the printed page. Black is considered the **k**ey plate.

6.31 The combinations of CMYK complete a full-color printed image.

6.32 Pantone® Color Selector guide indicating solid match colors printed on coated papers.



6.33 An example of a warm and a cool gray.

from a metal or silicon plate to a rubber blanket and then to the printing surface, usually paper. This method creates specific colors perceptually. The size of each dot, and each dot's relationship to another dot, increases the possibilities for color variation; the combinations of CMYK complete the full-color printed image. You can see the dots clearly if you enlarge the printed image.

An alternate method to achieve a spectrum of printed colors is to individually premix and print specific hues, called spot colors. Pantone, Inc., has developed a scientific matching system of these colors for professional printing. Their guidebooks are used to specify exact colors, and printers work from recipes for precise color reproduction (Figure 6.32). No designer's toolbox is complete without a Pantone Formula Guide.

In addition to the attribute of hue, color can also be considered in terms of saturation, or intensity. Pure primary colors are the most saturated. Add a bit of another color and they become less saturated, less intense. Colors that are more intense tend to move forward on the picture plane and those that are less intense tend to recede. This characteristic can be quite useful when creating the illusion of space on a two-dimensional plane or when trying to give emphasis to specific parts of your design. Through color, you can create the illusion of depth and space, which allows you to mold objects into three dimensions and establish foreground and background.

► *In Practice: Both process color systems—as cyan, magenta, yellow, and black (CMYK)—and spot color systems are used as specifications for offset printing. But generally only spot colors are specified for silkscreen, engraving, and stamping.*

Color Temperature

Color can also be categorized in terms of warm and cool temperatures. Color temperature is actually the visible light in a spectrum that is measured in Kelvin (K) units. Temperatures measured above 5,000 K have a cool bluish-white tone; temperatures between 2,700 and 3,000 K have a warmer yellowish-red tone. But translating temperature to actual, printed color can be difficult to specify.

The two gray squares shown in Figure 6.33 are of equal value (brightness) but have different temperatures. The square on the left has more red in it; the one on the right has more blue. When placed next to each other, the warm and cool differences are most apparent. Becoming sensitive to these subtleties can enhance your power as a designer. For example, the scene outside becomes more vibrant and multifaceted when warm and cool shades are used. Imagine a tree with warm, green leaves, hovering above a cold, blue street, with the bright, warm yellow yield sign. Warm colors tend to move forward on a picture plane, while cool colors recede. When mixing warm and cool colors, you can learn to control those relationships very precisely.

► *In Practice: So-called "white" paper actually contains subtle color, giving it either a warm or cool tone. Your choice of white paper can have an impact on the formal qualities of the design as well as on the message it relays.*

> *Orange is the happiest color.*
> —Frank Sinatra (1915–1998)

> *When I paint green, it doesn't mean grass; when I paint blue, it doesn't mean sky.*
> —Henri Matisse (1869–1954)

> *Any colour—so long as it's black.*
> —Henry Ford (1863–1947)

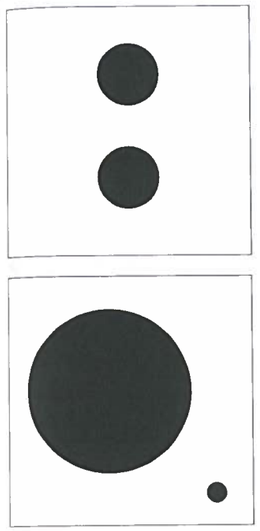
Psychological Effects of Color

Some people give a lot of weight to the psychological effects and associations of color, while others prefer to use color based solely on the visual impact. The psychological implications of color can be very complex and subtle. They also vary from culture to culture, so you should try to learn something about your audience when making color choices. However, there are some basic associations with colors to take into account when designing. You can manipulate these associations by slightly altering hue, saturation, and value.

The warm colors—red, orange, and yellow—have associations ranging from anger, agitation, and excitement to warmth, security, and new growth. Red is often associated with passion and with aggression. Yellow has strong associations with sunlight, warmth, and growth and, at the same time, can be considered cowardly or sickly. The cool colors of blue, green, and purple are generally thought to be calming and peaceful and are associated with stability, but they can also evoke sadness and despair. Blue often connotes authority and stability, but can serve equally well to invoke the sky and dreamlike, soothing states. Green has taken on a whole new range of associations with the interest in environmental issues. Black connotes stability, power, authority, and death and is often considered sinister or evil. White is usually associated with purity and light. However, many of these associations are different in other cultures. For instance, in some cultures purple, rather than black, is used in mourning. In India, white has negative associations and well as positive; in Japan, white is connected with death. In all cases, you need to consider your audience and do some research before making assumptions about color associations.

You will want to be particularly aware of certain color combinations commonly used in our society and make conscious decisions about how to use them. For example, green and red will always mean Christmas in the United States (and in many countries). Orange and turquoise remind especially older Americans of Howard Johnsons restaurants. Orange and black are used for Halloween. These associations don't necessarily restrict you from using those color combinations; just be aware of the potential underlying messages. Use of colors also changes just like fashion. Pay attention to the "fashionable" colors of the season, not with pressure to use them, but to be aware of what they are when making choices. For example, if you're designing a building's signage system, then you might not want to use a color that will be trendy.

Also keep in mind that approximately 8 percent of men and .5 percent of women are colorblind. If your message is dependent entirely on the use of color, you may be losing part of your audience. Try to make sure that, even if color is a major design component, it is still possible for a viewer to understand the information if they see only shades of gray.



6.34 Balance and contrast are created by differences in scale in relationship to each other and to the proportion of the page.

Compositional Principles

Compositional principles are broad aesthetic strokes that organize elements into pleasing visuals. Studying each principle starts by examining how it is formed in a particular situation. For example, if you place a large single word on a page, then there are three compositional principles at work, some standing out more than others. The first is the principle of direction, created by the word reading from left to right; the second is the principle of dominance, created by the word's ability to attract attention, either through its meaning or its visual qualities; and the third is the principle of proportion, created by the word's size in relation to the page itself. In most cases, these principles are embodied by elements such as color, texture, size, scale, and shape. All the elements must work together in the complex process of making compelling graphic design. Among the many principles that underlie good design, seven stand out: balance, contrast, direction, dominance, proportion, rhythm, and unity.

Balance

Balance is the distribution of items in a composition to achieve equality either symmetrically or asymmetrically. For example, both of the circle compositions shown in Figure 6.34 achieve a sense of balance. On the left, the two equally sized circles are centered; on the right, a large circle is positioned on one side of the page, which is countered by a much smaller circle. The space is balanced by their relationship. One of the advancements explored in twentieth-century design is the premise that a design could be freed by moving type and imagery away from a centered axis to one that is not centered. It may seem so obvious to us now, but it was considered quite daring at one time.

The identity design for Chaqwa (a brand of coffees, teas, and cocoas) uses symmetry together with just a hint of asymmetry to create a harmonious relationship (Figure 6.35). The mark, a series of patterned circles, is centered above a cup of coffee. The symmetry suggests a pleasant environment for the café—balanced and uncomplicated. It also suggests the pleasant warmth and aroma of the steam coming from the coffee. The only hint of asymmetry is the logotype, Chaqwa, which hangs off the center line, but even that is balanced by the line of steam from the cup that expands into the large, circular logo.

6.35 OFFICE, JASON SCHULTE DESIGN. Visual identity for a brand of premium brewed coffees, teas, and cocoas.