6

THE ELEMENTS

NATURE'S SENSUALITY

Part of nature's subtlety is its *sensuality*. There are many delicately complex and understated qualities of color, weather, and element that influence how you feel physically and temper your mood. Subtleties combine to give *sense-ability* to your daily experience of living by providing a background upon which all of life and its movements exist. Your senses are the receptors—physical and otherwise—through which you experience nature's sensuality. Humans, as with all animals, are continually in a sensory intake mode to process the world around them. As a creature of intelligence, you may influence some things you come into contact with, but their causes are usually a far more complex interplay of forces and factors you are not consciously aware of.

KEY CONCEPTS

- Nature displays itself in sensually accessible ways, and it is useful to align its "sense-abilities" as informational and aesthetic supports in design.
- The visible color spectrum is displayed as transmitted or reflected light within which there are subsets, such as structural color and monochromatic color.
- Color is relevant to order as well as emotional and intellectual states, and has natural associations as well as cultural or traditional preferences.
- The five elements are fundamental properties of physical space that are experienced through your senses and are associated with every other physical experience or manifestation.

LEARNING OBJECTIVES

- Experience cross-sensual interplay while being attentive to design and its structure.
- Understand subtlety as a crucial quality that brings depth and meaning to design by relating layers of information.
- Learn to use color and elements and their associated properties to describe and enhance your design.
- Create a "Sense-ability" journal to explore your personal interaction with the physical senses and develop them into a comprehensive design system.

Sensibilities influence your emotional state of well-being, your attention level, and your receptivity. The better you understand how to integrate some of the subtler relationships of sensuality into your design, the more sensability it has because you are mimicking nature's play of color, light, and feeling that the human senses respond to. Subtlety plays a significant role in the success of design by engaging the senses deeply and inviting the viewer to receive and respond. This creates design with more longevity and reach. Art and design that survive over time do so by containing perennial aesthetics and accessibility. Anything that survives momentary trends is directly linked into natural and timeless relevance. To create this sort of longevity in your work, you need an appreciation of subtlety. To understand subtlety, you must slow the artificial pace of urgency in daily life (the smaller and faster technology becomes, the more demands it places on your attention, time, and energy) to nature's pace of unfolding what exists around you in its own time (**Figure 6.1**). The beauty of nature is its continuity, which persists with or without your involvement. If you accept nature as your mentor and partner, you will find it a world of truth to learn from. In this chapter, you'll enhance your awareness of how subtlety supports continuity between your design, color, and element—the sensibilities that underscore all relationships.

Color Your World

"Every light is a shade, compared to the higher lights, till you come to the sun; and every shade is a light, compared to the deeper shades, till you come to the night."

—John Ruskin, 1879

Color is a visual effect caused by the composition of the light emitted, transmitted, or reflected by physical objects. Through a complex interplay between the light receptors in your head (your eyes) and the sun's dazzling energy, you perceive the visible spectrum of the rainbow.

Although limited to seven distinct colors, human vision has the acuity to see a range of subtleties in the spectrum visible through the medium of light (**Figure 6.2**).

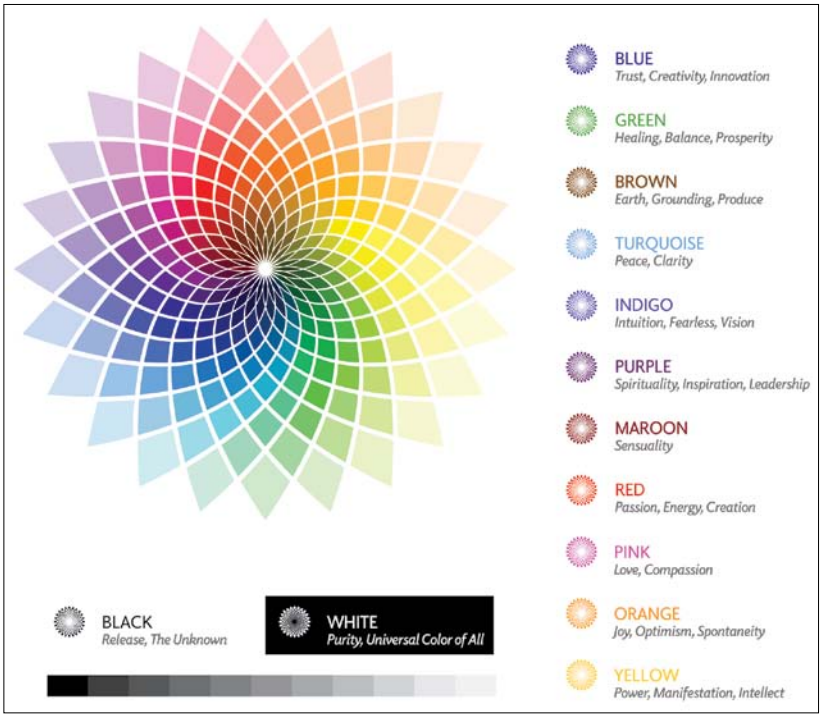
6.1 *The last dandelion seed clings precariously to the flower head awaiting the right breeze at the right time, to blow it into its next state of being (opposite).*

Light Creates Color

Sunlight is colorless or the white light of which all the colors of the spectrum are composed to make visible those colors the human eye can perceive. When you are looking at a backlit monitor, you are seeing the primary hues of RGB (red, green, blue) being transmitted through light. In daylight you are awash in color displaying variations of hue (the color itself), saturation (intensity), and value (lightness of tint or darkness of shade). Light creates color whether it is bouncing off an object (any physical object from a piece of fruit to a magazine page) or being transmitted through the medium of light (a rainbow or television screen). There are subset variations of seeing light: One of the ways you most commonly see color is through pigment—or a color changed by wavelength-selective absorption, such as freckled skin or the printed image.

In the identity rebrand for Autentika (**Figure 6.3**), a creative-interactive agency in Poland, highly saturated ink pigments combine with shape to create a play between dimension, color, shape, and order that gives the sense of emulating dynamic movement. Spreads from Autentika's identity manual (**Figure 6.4**) show

DID YOU KNOW? **Light illuminates the spectrum of colors that you see with your light-sensing organs, the eyes, which evolved from "eye spots," or light-sensitive cells that could detect movement but little else. "Eye spots" evolved into a camera-like eye structure that constricts to focus. The focus is further defined with depth and detail by a convex lens that is liquid-based and can contract and expand easily. It is the preferred eye structure for almost all higher animals because these factors balance light with movement.**



6.2 *A range of colors visible within the human color spectrum and some of their more universal human associations.*

the serious work that goes into creating an effective illusion of spontaneity. Spontaneity is a result of perfectly balanced structure. Balance provides the freedom to put energy toward something new. Rather than being used to continually align itself, balanced—or neutral—energy can expand into the next appropriately evolved version of itself.

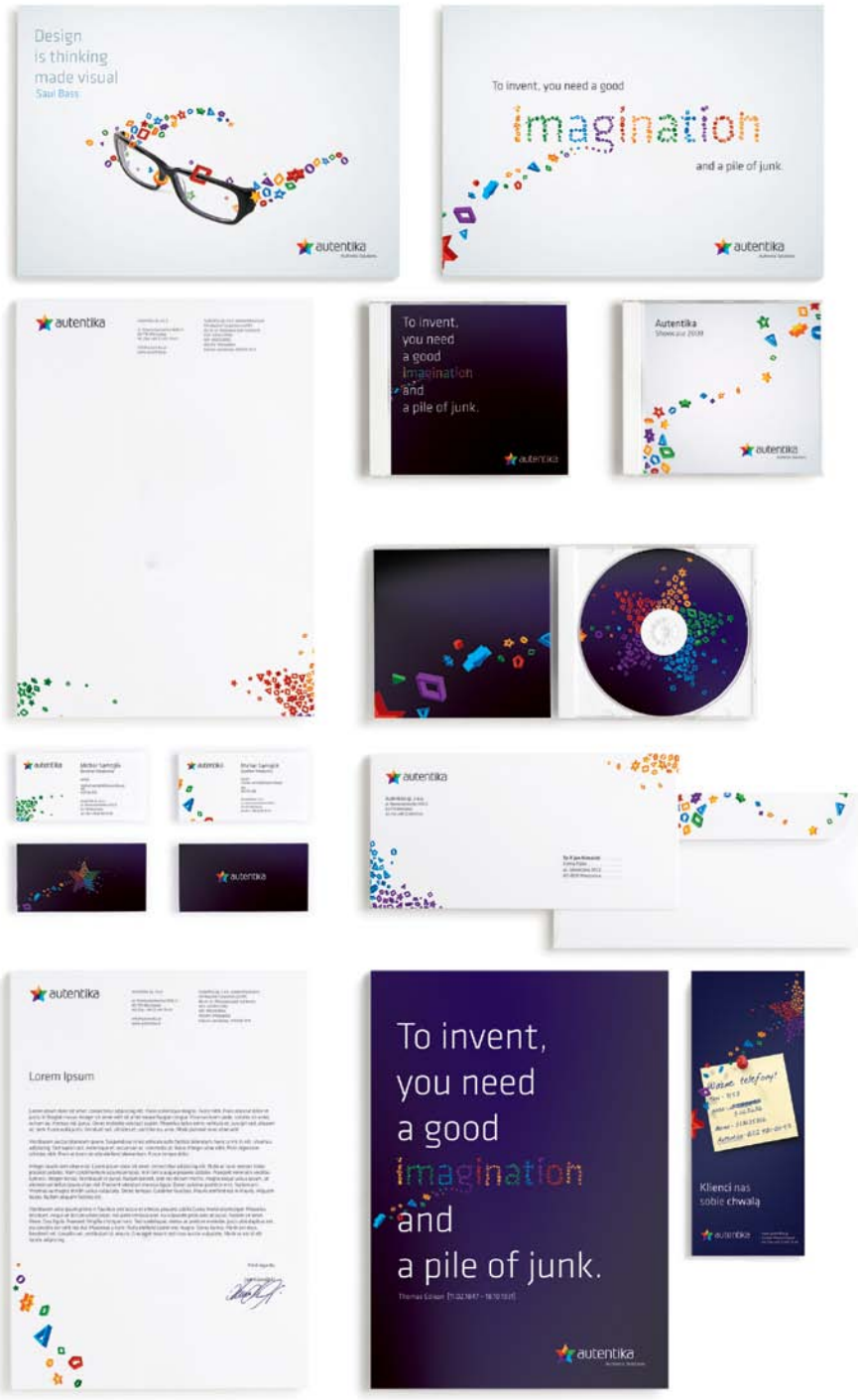
Color can also be visualized in ways besides pigment: structurally (butterfly wings, soap bubbles, iridescent feathers), dyes and stains (bodily fluids such as squid ink or blood), chemically induced bioluminescence (fireflies, marine animals such as jellyfish), as suspended particles (silt in water that creates different hues), and transparency (found in deep water animals). Colors signal many different things in nature, including warning, receptivity for mating, mimicry, camouflage, and transparency (which mimics its source of clear light at ocean depths where color is less relevant).

Color Form

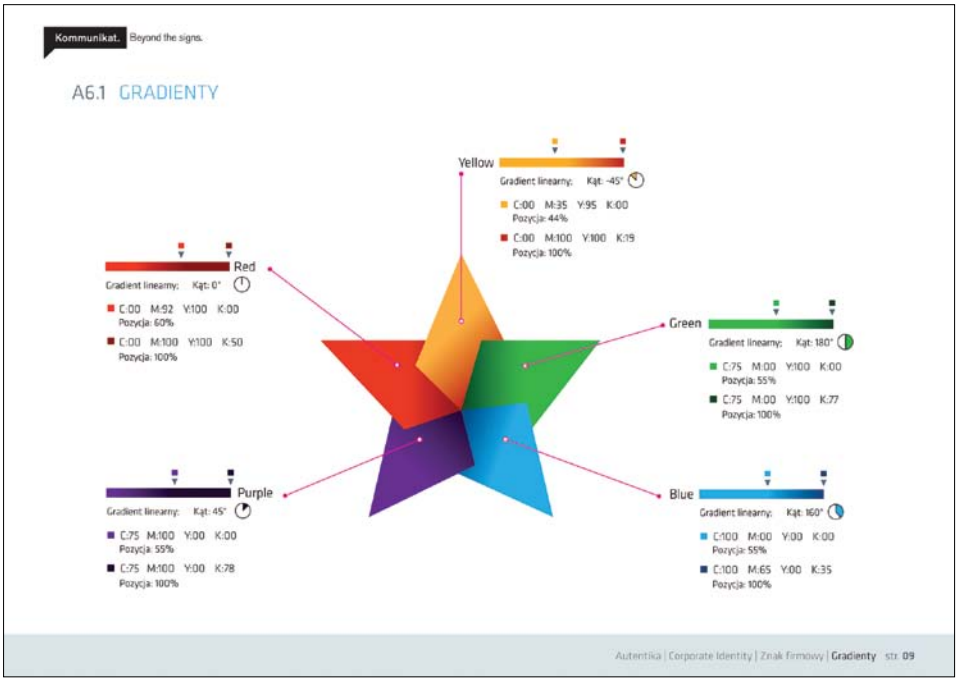
Structural color is a type of reflected color that changes in hue and intensity as light strikes multiple surface layers from different angles. The iridescent luminosity of butterfly wings, hummingbird feathers, abalone shell, and soap bubbles are all examples of this optical phenomenon. Butterfly wings are made up of structural scales that consist of fine ridges that diffract light to create metallic-looking colors, as the series of micrographs show in **Figure 6.5**. The mutation of light displaying as iridescent color is prevalent in tropical areas where vividly colorful wings and shells are in abundance. Because the tropics are inundated with brightly colored flora and fauna, a variation of bright color evolved to help mating partners find one another. Hence, microscopic levers that reflect multiple angles of shimmering light evolved to have an edge over saturated color alone.

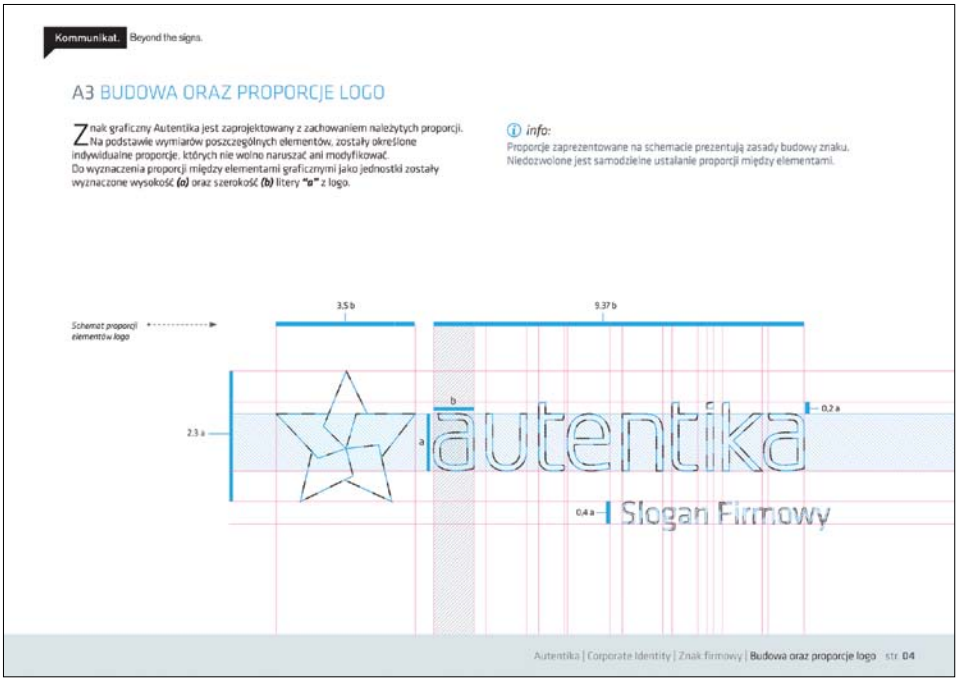
DID YOU KNOW? **Black on yellow is the color combination the human eye registers first. It scores highest in memory retention and visibility for printed materials. This combination is associated with poisonous snakes, frogs, insects, as well as road signs that warn of danger to alert and relay a sense of urgency.**

Similar to iridescence in nature, metallic inks have bits of metal flake (or sometimes synthetic pigments that resemble metal) suspended within the liquid that reflect at multiple angles. Metallic inks are more opaque than regular inks and are significantly influenced by the surface they are printed on. Uncoated papers will readily absorb and minimize their shine by sucking up the particles, whereas a coated stock has less absorption so that the metallic particles can rise to the surface, catch the light, and reflect back as glints. Like a tint, they are most effective when used on a large coverage area. They don't hold up well as delicate line art, thin rules, or small type because they can't deliver the same impact of a large surface area.

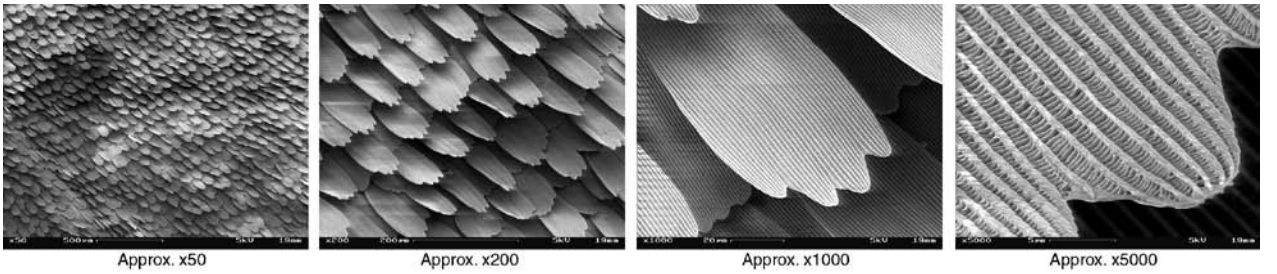


6.3 *Identity and branding elements for Autentika use highly saturated color combined with shape that express playfulness, inventiveness, and intensity. Design: Jakub "Enzo" Rutkowski/Kommunikat.*





6.4 *Spreads from an identity manual for Autentika demonstrate brand consistency that captures a sense of being lighthearted and professional. Design: Jakub "Enzo" Rutkowski/Kommunikat.*



6.5 *SEM image of a Peacock butterfly wing. The increasing magnifications in this series of micrographs reveal the structure of wing scales (which are actually transparent) and the tiny ridges of which they are composed. This feature creates a structural color shift as the insect moves, which in turn changes the angle and reflection of light for an iridescent appearance. Transparency, movement, and light combine to create luminosity.*

The basic quality of color is light, and there are many ways to achieve variations in its appearance depending on how it is bent or what it reflects from. This refers back to angles as the fundamental structures in constructing three-dimensional space from the prior chapter. Structure refers not only to physicality, but also to the more elusive senses that help sort out a world of immense variety, including what you might consider to be the less interesting shades of gray.

The Noncolor Colors

Black, on the other hand, absorbs light and therefore color: When dusk falls, you become color blind and revert to grayscale images because minimal light changes all hues to shades of gray. Human males also have a propensity toward color blindness, with 1 in 12 males (as compared to 1 in 20 females) born with the condition; the most typical color blindness either confuses or is missing shades of red or green. This is the same color vision many animals have, which seems awfully dreary when you think of experiencing the world solely through shades of gray and a few blues and yellows. Your dog or cat sees the world like this, but before you start feeling too sorry for them, remember that they can see far better than you in darkness and also compensate with highly evolved other senses, such as smell or hearing. On the other end of the spectrum, some animals, such as butterflies and bees, see colors you cannot in the ultraviolet range that lead them to pollen—and pollinating. A beautiful system.

Color is varied and without doubt one of the more pleasurable senses. Like anything in nature, it works by certain rules that determine how it is received depending on the circumstance. For instance, whether you are perceiving color under natural or artificial light can make all the difference in its hue, value, or saturation.

DID YOU KNOW? **Considered a "living fossil" having survived several extinction events, the horseshoe crab is bled for its blue blood (because it lacks hemoglobin). It is the only known substance in the world that can be used to test for contaminants in any vaccine or drug. If contaminated, the blood clots instantly. The crabs are collected and bled, and are usually not harmed in the process.**

The Changing Ways of Color

DID YOU KNOW? **Illustrator does not support an embedded color profile feature (you can assign a temporary RGB or CMYK profile when the file is created, but this profile will be ignored when it is reopened) because Illustrator is intended for output on CMYK devices. It is assumed that when an RGB format is desired, it will be created when the file is optimized for Web resolution in Photoshop.**

Have you ever bought an article of clothing or selected paint or carpet for a room and found it was a totally different color than what you thought you had chosen? This is called *metamerism* and is most common with neutral or saturated shades. When colors become lighter in value or more intense in color, the spectral range they can be viewed in gets smaller. This means that what looked great under fluorescent lights might look awful in natural light, and vice versa. This is a phenomenon of reflected light and why RGB colors from your monitor can look completely different when printed as a CMYK image in ink on paper. Color is the most malleable of all design elements: It can morph or mutate from one light source to another. This is an instance when embedding a color profile into your graphic is useful, because cross-monitor viewing with different color profiles will influence what you see. Because of the immense color shift variation between RGB and CMYK, a color profile can help to keep some control over how a client views your design. In the world of virtual working relationships it can be a challenge to keep everyone on the same page where color is concerned.

The universal color palette is within the earth-tone hues, whether viewed under artificial or natural light. These are the basic and universal colors found in almost any environment.

COLOR REFERENCES ORDER

In design, color influences mood, emphasizes one thing over another, and creates illusions of space, depth, and movement. Warm colors advance, whereas cool colors recede. Shade defines, whereas tints or lighter colors soften. This is why mountains in the foreground are darker against the lighter receding mountains behind them. Layers of atmosphere tend to make distant objects fuzzy and obstruct aspects of their definition, including color. Color and light, therefore, create order without having any associated form: no symmetry, no size, and no curves or angles (unless you factor in their invisible angles of light hitting a surface).

Colors exist in the larger context of human vision. There are three primary aspects to the perception of color:

- **Sender:** The transmitter of color.
- **Receiver:** The receptor of color.
- **Medium:** Color as it exists (such as a pigment in CMYK inks or skin color, or any object if you are reading this as a printed book) or as light (such as the color of an image on your RGB monitor or if you are reading this as an ebook).

MARK BROOKS : GUEST DESIGNER STUDY

DESIGNER : GRAPHIK DESIGN

*Designer Mark Brooks (New York and Barcelona) uses nature as the basis for many of his projects. In the posters for Biopölitan (**Figure 6.6** is an example of these), subject matter and technique combine for an earthy feel. The King Pigeon Yoga posters (**Figure 6.7**) use color and shape combined in a subtle play of hue, saturation, and value. The dimensional effect applied to the shapes contributes to the mood and ordering of the designs' illusion. These posters were created for readings in "organic poetry," a genre of poetry that describes and praises nature in all of its manifest forms.*

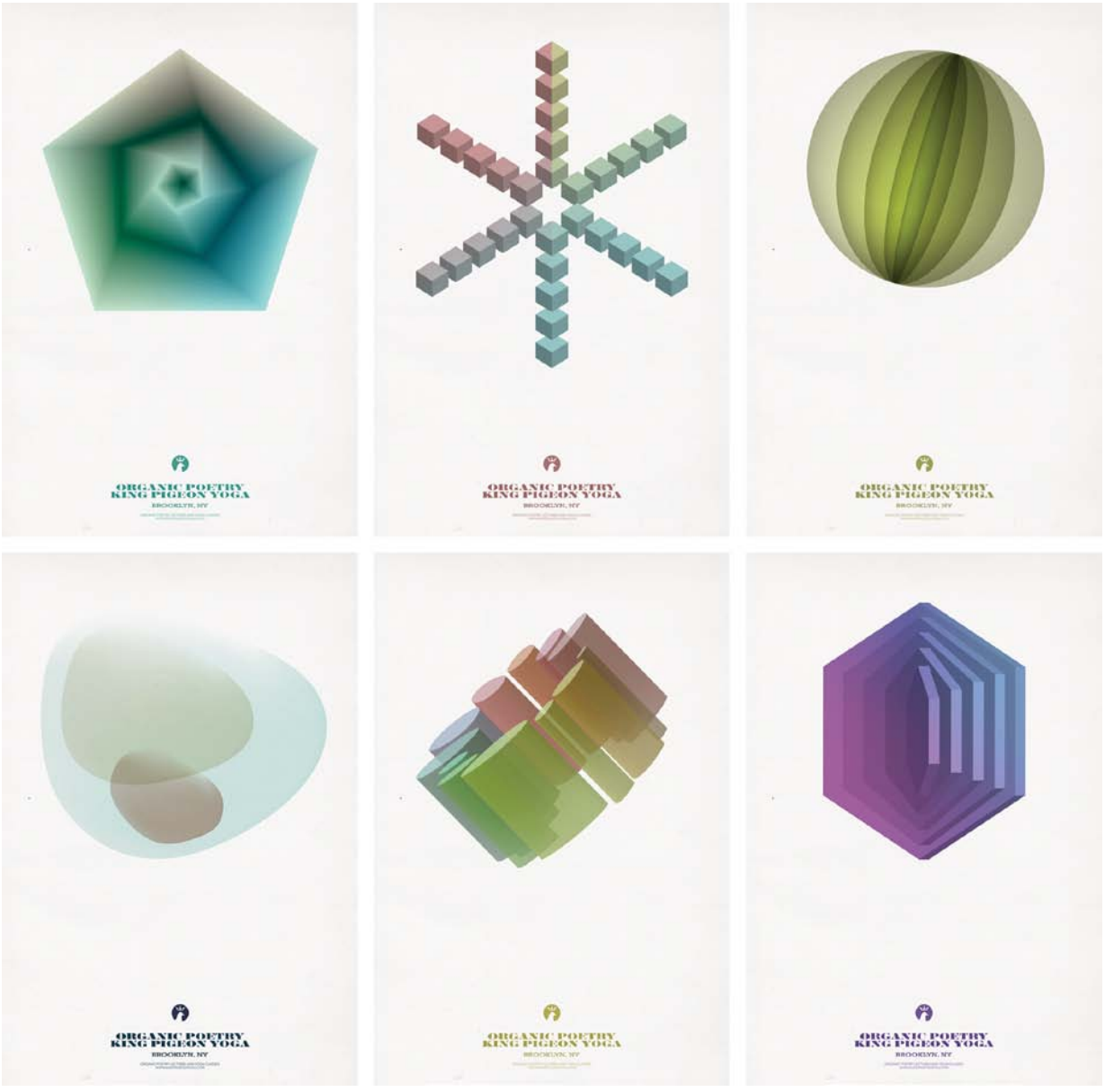
Mark says of the KPY posters: "I was commissioned to design a set of posters to illustrate and promote a series of organic poetry readings at the KPY center in Brooklyn. Organic poetry has nature as its main source of inspiration, and so do many designers. Nature provides the most perfect and fascinating geometrical shapes, exquisite patterns, surrealistic perspectives, rich textures, and delicate colors we can imagine. All we do, all we are, and all we can conceive is based on what nature has created.

The KPY designs were intended as a graphic code derived of this concept. Elemental shapes such as circles and hexagons—even anamorphic forms—are the essence of many living forms and structures. These shapes alone can already have a strong organic presence at a graphic level. The way they interact and morph, along with their chromatic ranges, enhance such values and transport the viewer into a visual realm of calmness, nature, balance, and harmony. These elements are directly related to yoga and meditation, and were requested by the client to be represented in the designs.

Organic poetry is to literature what veganism is to gastronomy. This style of poetry describes earth, fire, water, wind, and the all consequences related to the four elements, and avoids references to manmade or artificial elements, as well as the complexity of human relations." ■

6.6 *Mark Brooks started the Biopölitan project in 2010 as a designer in support of nature. The project invites graphic artists to contribute a design piece for publication. The proceeds from the book will be donated to environmental associations.* Biopölitan Limited Edition Poster #III. *Art direction and design: Mark Brooks, Barcelona and NYC.*

6.7 *A poster series for "organic poetry" readings at a yoga studio in New York. Plays between color, shape, and the elements combine in an aesthetically stylized collateral system (opposite). Design: Mark Brooks Graphik Design.*

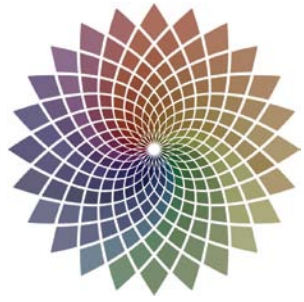


A Natural Palette

When humans began painting, they used "earth" pigments that were either readily available or could be obtained within a reasonable distance on foot. These colors might be considered drab in the flurry of candy-colored intensity today, but you still recognize a warm earthiness and consistency: Blacks were carbon sourced from burned wood, ivory, and bone; red or yellow ochres and umbers were ground from minerals (mining is believed to have originated with the need to procure color from iron ore and other minerals; the human urge for art has always been strong); and white came from ground calcite—all relatively common throughout the world (**Figure 6.8**). Earth pigments don't fade over time and aren't affected by climate changes like dyes from vegetable or animal sources; consequently, these basic colors are common in all prehistoric art. Integrated into your work, they create a timeless palette that relaxes and energizes the viewer, similar to the experience of being in nature. The earth-tone color palette in **Figure 6.9** is a start to creating your own color combinations. Experiment with what makes you feel connected and think about how it might be appropriately integrated to support your design's message.

6.8 *Prehistoric graffiti as a personal statement of "hand to earth" from Patagonia, Argentina.*

David McCandless, a data analyst, information designer, and author, investigated color perceptions from different cultures. He asked questions like: What color is happiness in China? Or good luck in Africa? Or anger in Eastern Europe? Are any color meanings universal across cultures and continents? David was curious, so he researched, gathered data, and visualized the result in **Figure 6.10**. Although there are universal meanings for many colors, there are also distinctions between cultures because of custom and tradition. This infographic describes what he discovered while researching the similarities and differences between cultural meanings of color. David's book is *The Visual Miscellaneum: A Colorful Guide to the World's Most Consequential Trivia* (US version published by Harper Design, 2009), or *Information Is Beautiful* (UK version published by Collins, 2010). Of particular interest is that black represents mourning in the West, whereas white represents it in the East, and purple is flamboyant in either place.



6.9 *An earth-tone color palette makes timeless connections into nature and references common sensibilities worldwide.*

In the following section, you'll learn more about the elements, how they impact every aspect of your life, and how to use them as a vehicle to deliver the subtler communications of your design in concert with color.

6.10 *"Colours and Culture," an infographic by UK data analyst and information designer David McCandless & AlwaysWithHonor.com (opposite).*