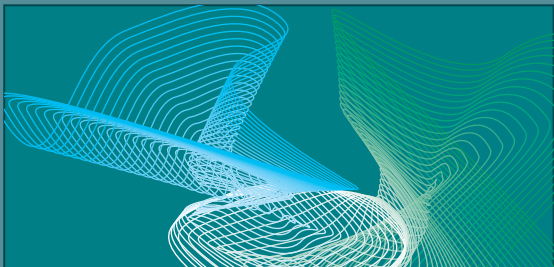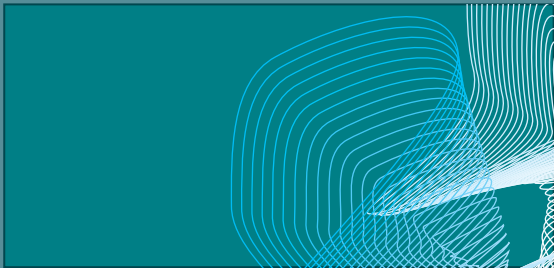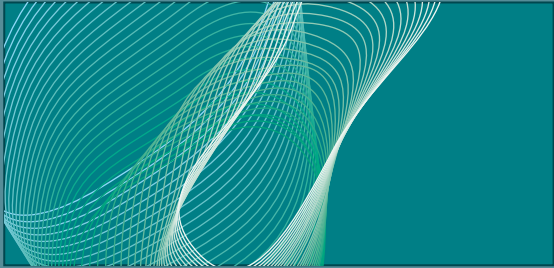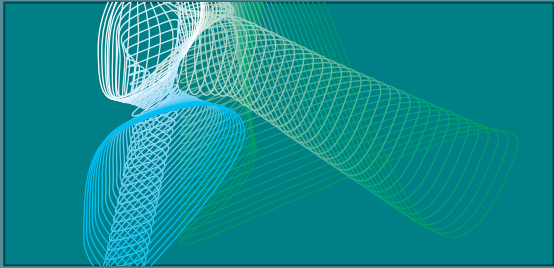# The Power of Color

Color Palettes, Theory, & More

CHAPTER 4
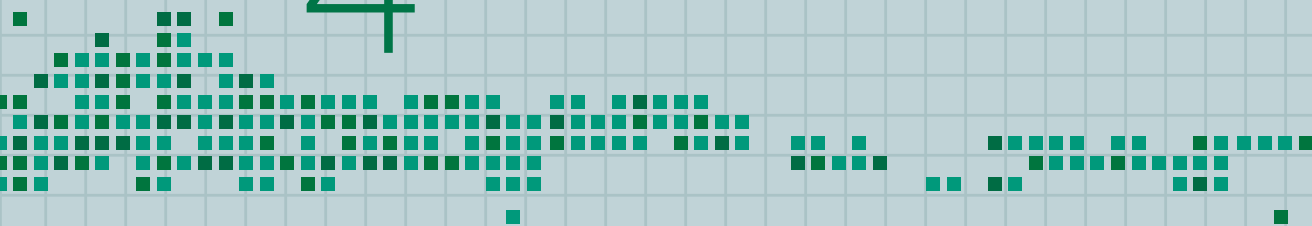
Color is one of the most important and most fundamental elements of design. Color creates the mood of your design, thereby defining the experience for your audience.

However, and at times unfortunately, we as web designers are somewhat limited by our medium. Where print designers can choose from a plethora of paper, inks, bindings, and print processes, the web designer must assume that his work is being experienced by a viewer looking at a monitor. Because web design in a sense is a virtual art, we can't use a softly embossed paper to create the feeling of elegance for a wedding invitation or design a book cover made from handmade paper to create a feeling of intimacy with the subject matter. Instead, we use color and composition with color to evoke the feeling and emotions associated with our work.

In this chapter, you will learn some fundamental ideas about color. We will discuss the different ways to look at color, and how color can be used to express emotion. You will learn how to integrate color into your design on both practical and philosophical levels. The main goal is to learn how to use color conceptually and organizationally to push the concepts of your design.

Understanding Color

Just as no two people are alike, no two individuals experience color in precisely the same way. Color triggers both physical and emotional responses based on one's experiences and personality. Every person has a unique reaction to seeing a color or combination of colors.

What Do You *Really* See?

As unbelievable as it may sound, some people see as many as one million colors. Most of us can see tens of thousands, and some (unfortunate) people can only see a few. Different shades of the same color create depth and enable us to see form in objects and contours on surfaces. For example, boundaries of space are indicated with color variation on maps (see Figure 4.1).

The many shades of green on the map show water depth. If you only saw one, or just a few shades of green, you would never be able to distinguish information. The map would look like a blur, and though you might see slight variations in tone, you would never see the detail required to understand the information. If the cartographer had used other, unrelated shades of color instead of variations of the same color, the information would not read as water. Instead, you would have an entirely different experience with the image. Too many colors would most likely provide too much unrelated information and would thereby defeat the map's purpose.

The colors you see are entirely dependent on light (see Figure 4.2). Take a moment and look around you for a plant or tree. What colors do you see in the leaves? You probably see green somewhere. Notice how the green varies

4.1

4.2

figure 4.1

Different shades of the same green enable you to distinguish water depth.

figure 4.2

Light enables you to see the vibrant colors of the lanterns. Photo by Mark Linnemann.

depending on where the light hits the leaf. The shade is entirely different under the bend of the leaf where the light is not as intense. Notice how the greens vary as you focus on different areas of the plant. Now imagine what you would see if you turn out the lights. You probably wouldn't even see green any more. You would still see the shape of the plant. However, if you tried to distinguish the plant's colors, you would probably see different shades of deep, dark blues and greens, almost black. It's still the same plant, but your perception of the color has changed entirely.

More than Meets the Eyes

The power of color lies far beyond the eyes. Association with memory is what makes us feel emotion in relation to what we see.

An infant and an adult have completely different associations with colors. For example, an infant may respond to a red, white, and blue striped poster in a purely formal way, but an adult would make the association of these colors with the American flag and respond to it from a political view.

The example goes much deeper than obvious cultural connections. Every individual has unique associations that come from experiences in life. A particular shade of blue combined with a certain yellow may jog the memory of a shirt your mother wore when you were young. These types

4.3

4.4

of associations are the most powerful of all because they can bring in other senses like the scent of the perfume she was wearing and the memory of that time in your life.

What Difference Does Color Make?

Knowing that every person has a unique experience with color and that color need not be categorized and "beholden" to any one object or subject is key to understanding how to create moods in your design.

Gordon McNee, a Scottish designer based in San Francisco, created a film about his personal experience with a degenerative eye condition. The intention of this film, *20/400*, was to educate people about the eye disease keratoconus. This was done through narration and visual experiences (see Figures 4.3–4.6).

In these frames, many saturated colors are placed over images of a busy street. These colors are intended to reinforce the emotions that are being expressed. They compensate for the lack of clarity and detail within the image. They also heighten the "internal awareness of seeing." The message is that when certain areas of vision are impaired, they are compensated for by others.

figures 4.3–4.6

In this section of the film *20/400* saturated colors were used in order to add information where visual details are minimized.
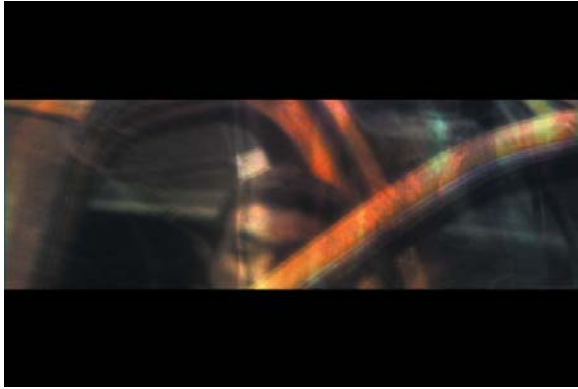
4.5

4.6

Using Color

Design is about conveying a message, and although being true to reality is important, so is creating an emotional image. The mid-nineteenth century marked a pivotal point in art history. That's when people began to represent objects in a way that was more about the momentary experience with the image than the image itself. Painters, sculptors, and poets all over Europe moved away from trying to represent the tangible world, and moved toward the use of form and color as a means of conveying feeling rather than rendering reality. Art became about the expression of emotions. Where previously it was used to represent reality, it now was attempting to reveal new, more abstract realities, reaching into the subconscious, the heart, and the soul. If a painting was about the sadness of war, the emotion was expressed with harsh contrasting colors in their purest form as opposed to photorealistic battle scenes of horses, flames, and dying people.

These same modernist ideas translate to web and interactive design. Ancient Forest Rescue, an activist group established to save old growth forests from clear cutting, needed a small web site to state its mission and its cause (see Figures 4.7 and 4.8). The purpose of the site is to inform citizens about deforestation happening in the small farming town of San Luis, Colorado. In designing the site, the obvious solution would have been to use green to represent the trees of the forest. However, when the designers thought about the message, they concluded it was more important to convey a sense of urgency to the site visitors. The use of greens and the cliched reference to nature would have been too calming and would have detracted from the message.
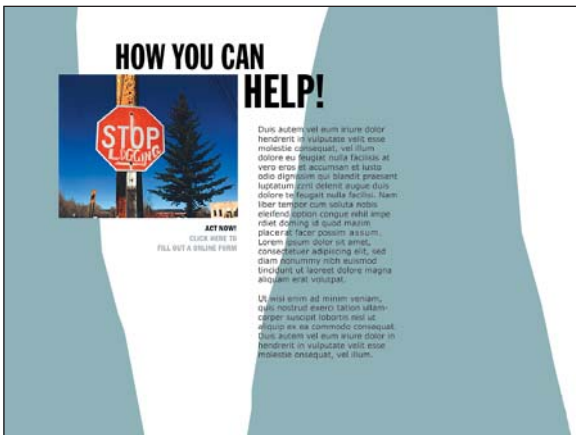
4.7

4.8

4.9

4.10

figures 4.7 and 4.8

Sharp contrasting colors and bold shapes create a sense of urgency for the activist group.

figures 4.9–4.12

In the film *20/400*, the artist mini-mized color within certain sections to allow the viewer to experience the emotions associated with the eye condition that is being discussed.

Instead, flat color fields with bold contrasting lines and dramatic angles create a sense of discomfort. The neutral background blue hues allow visitors to focus on the photography and textual content of the site.

These are fundamental ideas in design, and approaching your work with an open palette will feed you with a never-ending source of ideas and solutions to design problems.

Minimizing Color

Sometimes "pulling" color allows the viewer to participate more with the image. In the case of the film *20/400* by Gordon McNee, color is used minimally to allow the viewer more space to think (see Figures 4.9–4.12).

If the filmmaker had given the viewer all the actual color, the experience the viewer had would be quite different. By minimizing the color, the viewer is given space to "interact" with the image and narration. As a result, the absence of color adds sophistication to the piece.

Color treating photography (duotone, desaturate, colorize, and so on) works well on the web. First of all, the less color in the photo, the smaller the file size will be. Apart from image optimization, treating photos consistently adds a sense of uniformity to the site. Coloring treating photos is a good way to use photography as a textural element of your site, without pulling too much attention away from the main content.

4.11

4.12

Fluent Studios was hired to design a site for an upscale beer company (see Figures 4.13–4.17).

The target audience was "hip" people between the ages of 23 and 35. The photography was all shot at bars in various cities. As every bar had unique lighting situations, the photos from each location looked dramatically different. The designers decided to pull most of the color from the photos and then colorize them with warm reds, oranges, and yellows. Once treated, all the photos held together as a body. The designers succeeded in establishing the appropriate hip, glamorous mood by pulling colors from the treated photos and integrating the same palette into the interface.
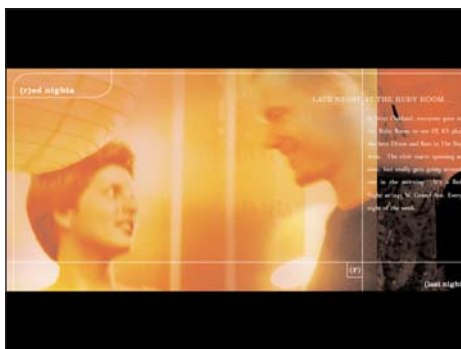

4.13

4.14

4.15

4.16

4.17

figures 4.13–4.17
Fluent Studios treated all the photography in the site with red and warm toned overlays. The navigation was then designed by pulling color from the photos. The result is a glamorous mood and a sense of uniformity throughout the piece.

Case Study

Studio eg

Studio eg is a company that designs and manufactures office furniture using recycled materials and low energy manufacturing processes. They pledge a commitment to "ecologically smart design". The Studio eg web site (`www.studioeg.com`) is a good example for how color is used to reinforce the environmental friendly aspect that makes the company's work unique.
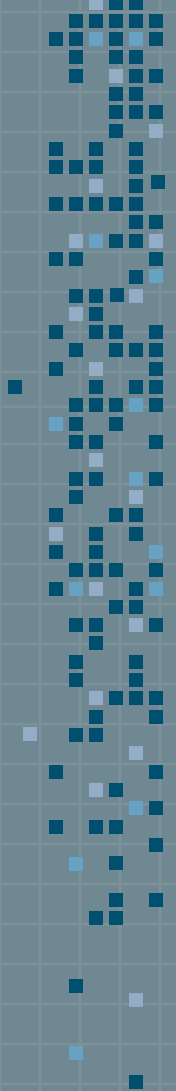
4.18

Soft colors and organic shapes give an earthy feeling to the Studio eg site.

The home page (see Figure 4.18) introduces the palette of the site. Soft, unsaturated colors give a calming effect. The colors are combined with organic shapes and curvy lines to create a serene feeling, suggesting nature. The white outlined "egg" spins within the larger solid egg. The motion looks like a gear spinning around welcoming the visitors to the site, which, as it unfolds, becomes a web "recycling machine."

Each section of the site is associated with a different hue. The "materials" page (see Figure 4.19) uses oranges, the "components" page blues (see Figure 4.20), and the "cabling" page greens (see Figure 4.21). The main navigation for the site associates each of these pages with their respective colors. This creates a system and adds another level of logic to the navigation. The color theme remains interesting because it varies from page to page. If all the colors were combined on the same page, the effect would be much less powerful than the isolated color groups from page to page. The monochromatic quality of the individual pages reinforces the soft feeling while the combined overall effect is actually quite colorful.
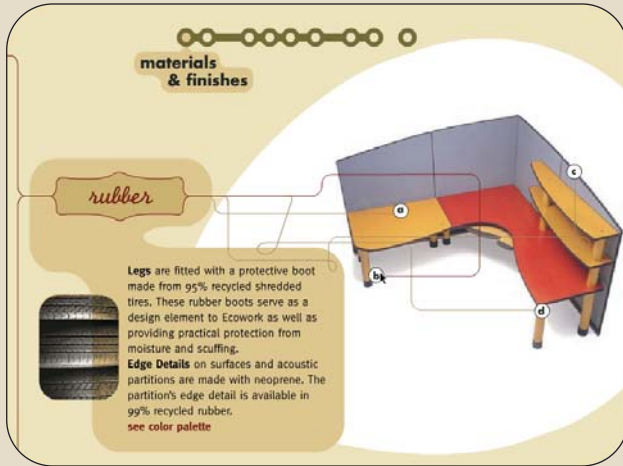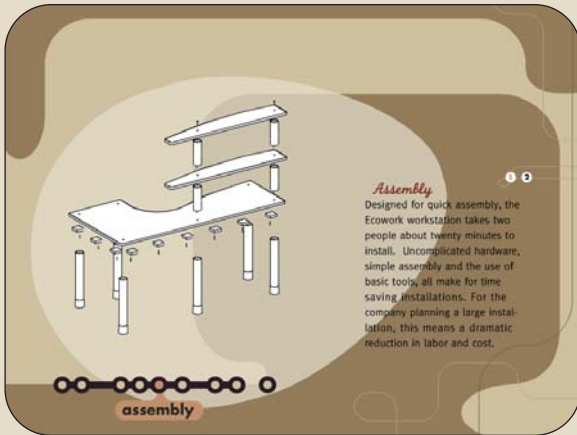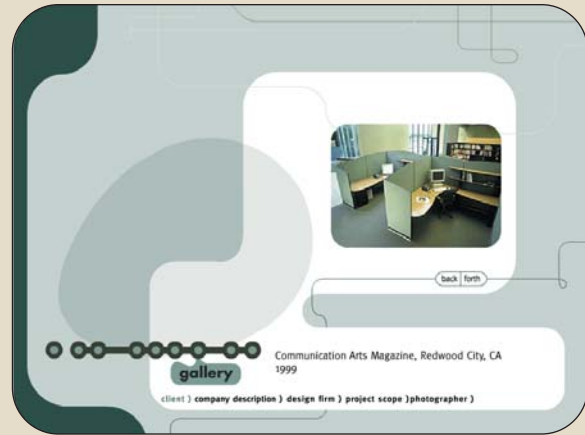
4.19
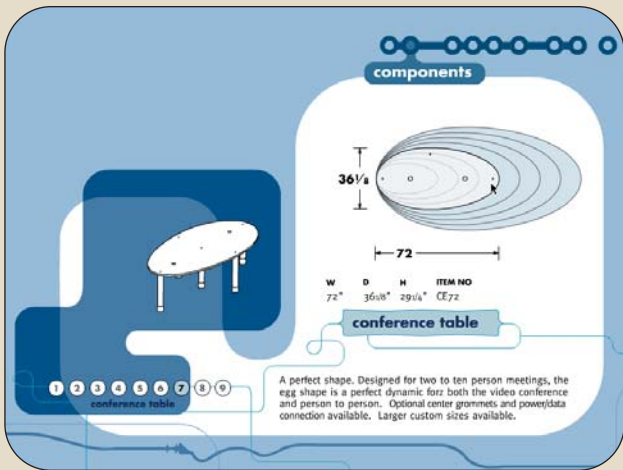
4.20
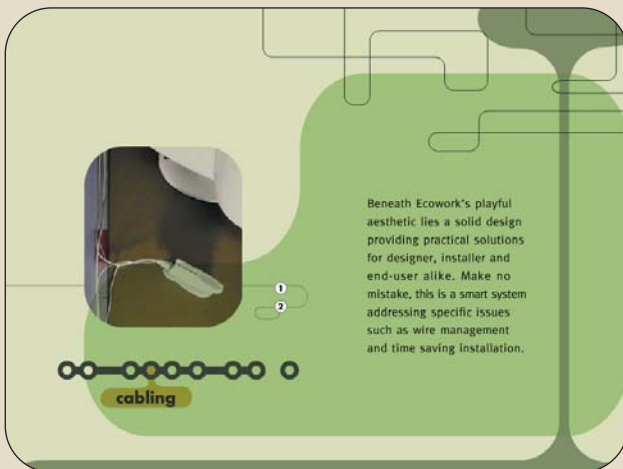
4.21

4.19–4.21

Although each page is monochro-matic the overall feeling is quite colorful.

4.22

4.23

4.22 and 4.23

Different shades of the same color create individual compositions for each page.

The color schemes of the individual pages work because they use variations of the same color to break up the space. The assembly page uses brown tones (see Figure 4.22) to create depth within the composition. The background is a light brown, and the main bulbous shapes use the same brown tone in different values. The egg shape is screened back in white. This partial transparency allows for two more variations of the same brown color to show through. The only other color is a sparsely used red, highlighting the image caption and text heading. Similarly, the gallery page (see Figure 4.23) uses varying tones of an icy greenish-blue and light gray.

Aside from color, the shapes, typefaces, and motion used throughout the site add to the over-all effect. The site is a good study for how these various design elements can be combined to add mood and personality to a design.

Tip:

Use the hue/saturation feature in Photoshop to create interesting color effects. Open a photo in Photoshop. Select the entire image and select Image, Adjust, Hue/Saturation. Check Colorize in the Hue/Saturation pop-up window. Drag the Hue slider and see how the color tones of your image change. Drag the Saturation slider to increase or decrease the amount of saturation.

Choosing Your Colors

Now that you know you can choose just about any color for any subject matter, the next step is to narrow your selection to the colors that will best convey the message of your site.

First, you must understand the subject matter. This is one of the most fun parts about being a designer. Each client you have is different, and with every project comes an entirely new range of content. With each project, you get to learn about a whole new field aside from design. One month you may become a semi-expert on the subject of outdoor athletic wear, and the next an aficionado on analytical instrumentation and process chemistry.

Next, you must define your audience. Who will visit the site? A clothing company might ask you to design its site. The site should look different if it is a retail store for customers rather than an online resource for suppliers. When you determine who will be viewing the site, you can begin to select a palette. For example, an audience of children will generally respond best to bright, contrasting colors (see Figure 4.24). Even within the category of children you can break down color by gender or interest.

figure 4.18
Children respond well to a bright color palette.

As a rule, color combinations that you find in nature generally work quite well (see Figures 4.25–4.27). If you are stuck on your selection, go for a walk and notice the palette of your neighborhood. A look at the outside world will suggest color combinations that you never dreamed possible.

4.25

4.26

4.27

figures 4.25–4.27
Good ideas for color exist everywhere. These palettes were pulled directly from the photos.

figure 4.28

Various color blocks create the navigation for carlsonsolutions.com. Brighter colors are placed in smaller rectangles, and although every navigation element is a different size, each element retains the same importance.

figure 4.29

It's easy deviate from a set palette by using variations of the same colors.

Be careful of using too many colors. Color composition is about balance, and the more factors you add to the equation the harder it is to solve (see Figure 4.28). If you only use one color, balancing color within your composition is easy. If there are two colors, you pull the focus back and forth between them. One color is most likely bolder than the other and should probably take up less space. As you add more colors the balance becomes easily disrupted.

Try to keep your palette to a reasonable number of colors. Don't worry, by no means are you limited by any specific number—within each color, you have unlimited variation (see Figure 4.29).

Tip:

Adobe Illustrator makes it easy to create hundreds of variations of the same color. Draw a small solid square and fill it with a color. Pull up the color modification window (Window>Show Color). Select the square. Make sure you are modifying the filled color and go to the color slider. Hold down Shift and drag your mouse along the slider to the right or left (see Figures 4.30 and 4.31). Notice how the color of the square and RGB values change as you move your mouse. When you get a color you like, make a copy of it and soon you'll have numerous variations on your original color—a beautiful integration to your main palette.

In client design, you will sometimes be limited by a predefined corporate identity. This can be frustrating, especially if you don't like the palette. As a designer, it is your job to make the most of this situation. Think about ways you can use neutral colors or black and white for the background and use the corporate identity colors for accent. Companies hire you to create an image for them and you must be strong with your decisions. It is your responsibility to do what works. Don't let a client's bad aesthetic or predefined ideas hold back your design. If the client still insists on a certain palette, you should back your opinion with technical reasons. For example, small blue type is illegible on a black background.
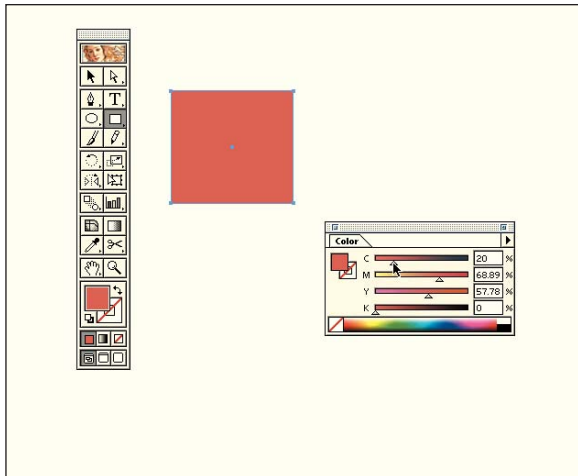
4.30
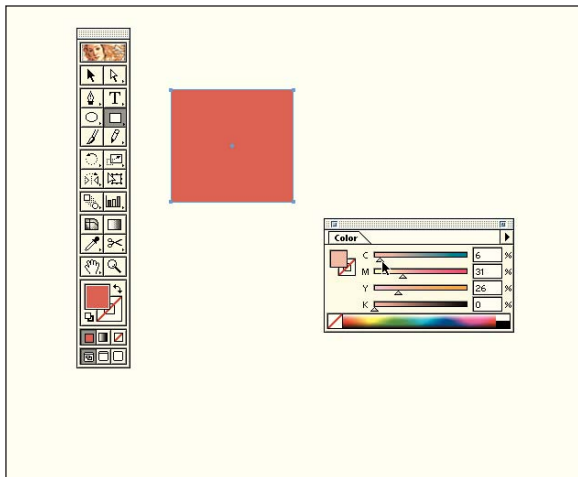
4.31

figures 4.30 and 4.31

You can create countless variations of the same color by holding down Shift while dragging the color bar in Illustrator.

You can explain that with print, you are assured your result—you control the medium—but with the web, you never know what type of monitor the viewer is using. You need to design for a huge range of possibilities, and it's not worth risking losing part of your audience because of technical issues. The best client is one who challenges you to think, yet trusts you to do what you think is best.

How Color Applies to a Web Interface

Choosing color is just the beginning. What you do with the color, and how you arrange it can make a web experience delightful or intolerable.

Background Color

The background color or pattern you choose is the foundation of your page. If you choose a color, it needs to be harmonious with the rest of the colors on your page. The biggest mistake people make is to choose an overpowering background color. If you are choosing a solid color for your background, try to stay in the web-safe palette. (See the section "The Web-Safe Palette" later in this chapter.) You should not feel compelled to stay in the web safe-palette for most of the content of your site, but the percentage of background space on your page is large enough that it makes sense to choose colors in the safe range for this area. Web-safe colors are particularly important for backgrounds

because the color will probably backdrop text that needs to be read. A dithering background could distract from the content for users of older monitors.

Background patterns can look beautiful, but if misused they can make it impossible to read a page. When you use a background pattern, keep in mind that you are making a conscious design decision, and have a plan for how it works with the rest of your page.

Fluent Studios designed an interface for a web-based application that enables users to type into fields and receive responses from a server based on key words (see Figure 4.32).

The page required frames, but the designers made sure the different frames merged together seamlessly. To make the design work, they had to rely on a background pattern to present the interface. The design was carefully planned and the page elements were placed within the background pattern.

figure 4.32

In this interactive web-based application, background patterns are used to seamlessly integrate frames and help lay out the interface.

Tip:

When you use a background pattern, always specify a background color in your HTML. Choose a color that is dominant in your pattern. When loading, the browser will always flash the background color designated in the HTML before loading the pattern image. If the background image is large, the HTML specified color will show until the image has completely loaded.

Textual Content

When you choose color for type, use common sense. Pick a color that reads well on the background you have chosen. If you are choosing a text color for a large body of copy that contains important information, choose a color that will cause the least amount of stress on the eyes. White type on a black background may look

great in your design, but the opposite is much easier to read. Choose colors that contrast one another, but not so much that the type begins to glow. As with the background color, stick to the web-safe palette. Avoid dithering on shapes that are as small and important to distinguish as letters.

Navigation

Color coding navigation is an excellent way to create an interface that facilitates ease of use. Almost everyone can make conceptual associations with colors. Since we were kids we categorized information by color. We had different color folders and notebooks for each class. We put color rings on our keys to distinguish one from the other. It is natural and logical to sort information by color.

People are so adept at finding information by use of color association that we almost have to be careful not to mess up! As you design a site, be very aware of the relationships you make between navigational elements and color. You, the designer, establish the rules for the user. When you deviate from your own rules, the user becomes confused. For example, imagine designing a system where orange text always links you to the glossary. If you decide to make another type of link orange, the user will be confused. When he clicks on the text and ends up

somewhere other than the glossary, he will no longer associate orange with the glossary and the system you created is dismissed.

Using Color to Create a System

Color coding your background and navigation can create a solid system of information architecture. The homepage of carlsonsolutions.com introduces the main navigation of the site (see Figure 4.33).
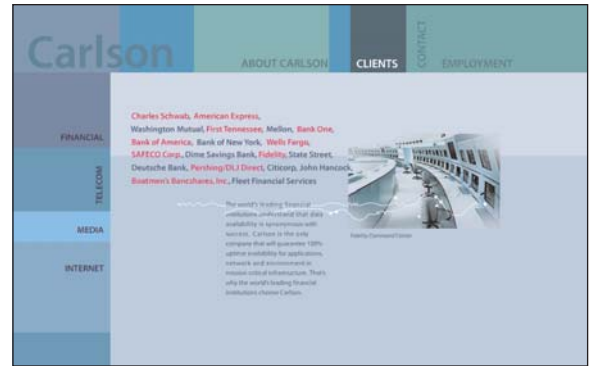
A different color block in the navigation represents each major section of the site. When you click on one of the words, you go the main page of that section (see Figures 4.34–4.37).

4.33
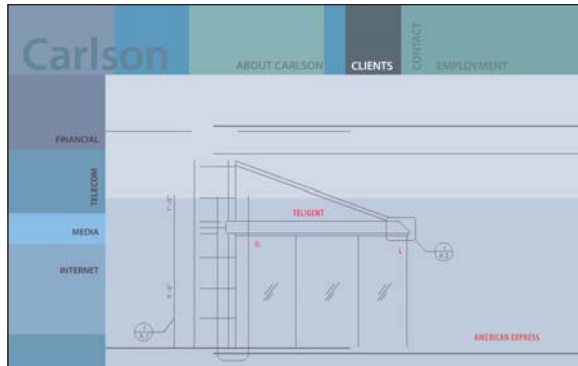
4.34

4.35

4.36

4.37

figure 4.33

Carlson's homepage introduces visitors to the color system used throughout the site.

figures 4.34–4.37

Each section of Carlson's site maintains the color scheme defined by the navigation.

The primary color of the background for each section of the site is taken directly from the main navigation. Notice how the "clients" section is called out by blue navigation (see Figure 4.34). When you click the blue button, you go to the client's main page. All the pages within the client's section are laid out in blues. Notice how the rest of the main navigation changes to various blue tones. If the designer had maintained the same navigational color palette from the home page to this section, the page would look busy and the color would not mix. When you roll over the top-level navigation in any of the main sections of the site, the color that designates that section from the home page reappears, branding a site section with a color. Within each section, the color remains unobtrusive to the composition, yet works as a navigation and information categorization device.

The Web-Safe Palette

We all have our own opinions about the web-safe palette. We love it and we hate it. We use it and we refuse it. One of the scariest parts about publishing your design is that once it is on the web, it is out of your control. Everyone will see it a little differently.

Theoretically, the web-safe palette will be visible on all 256-color monitor systems. If you use a color in the palette, you are assured that a user on a 256-color monitor will not see dithered color. This is particularly important for large background areas and type. If you have a lot of copy that is laid out in small type, you should stick to the web-safe palette for type and background color. If type breaks apart on a dithered background, there is a possibility that the copy will be illegible.

Although using the web-safe palette will eliminate dithering, cross-browser inconsistency, and major color shifts, it does not assure 100-percent consistent viewing for your page. Color is also greatly affected by ambient light, monitor settings, the actual color depth of the monitor, and the type of monitor being used. The best way to check color is to test your work on as many monitors and platforms as possible while you are developing your site.

Most design applications provide you with the web-safe palette. In Photoshop, you can load the web-safe palette through the Swatches window. Click Load Swatches and find the folder Adobe Photoshop>Goodies>Color Palettes and load the swatch Web Safe Colors. If you stick to the swatch colors you will be safe.

The downside of the web-safe palette is that it is extremely restricting, and it is difficult to find the exact colors you want. Most of the colors are highly saturated and difficult to combine. There are few soft colors, making subtle color usage almost impossible.

The best way to decide whether to stick to the web-safe palette is to define your audience. Is your audience a high-tech, hip group? If so, they'll probably have monitors with thousands of colors. If you are designing for a large corporation that anticipates millions of visitors, you should probably go with web safe.

There is no guarantee for how others will see the different colors in your site once it's published. There are too many variables involved. The best thing you can do is to test your work on as many monitors, browsers, and computer configurations as possible during your design process.

Summary

Color is one of the most important elements of your design, so use it wisely. Select colors that will heighten the audiences' interaction with the page. If you are going for clarity, choose subtle background colors with contrasting dark type. If you want to create a mood, choose colors that generate feelings and emotions. Sometimes the least obvious color selection will be far more powerful than one that is expected. Removing all color, or replacing a multicolored image with a limited palette may create mystery and drama. Take time choosing your palette…it may have more of an impact than any other single item in your design.

URLS In This Chapter

- **Carlson Solutions**
  www.carlsonsolutions.com
- **Studio eg** www.studioeg.com