HOUR 5

Adjusting Color

What You'll Learn in This Hour:

- Evaluating Your Color Adjustment Needs
- Adjusting by Eye with Variations
- Making Other Adjustments
- Preserving the Original with Adjustment Layers
- Understanding Channels

Are you one of those people who like to play with the color adjustments on the television set? If you are, you're going to be absolutely astounded by Photoshop's color adjustment capabilities. If you haven't a clue as to what I mean by adjusting color, that's okay, too. By the end of this hour, you'll be able to turn red roses blue, change a sky from midday to sunset and back again, bring out the detail in shadows, and control every imaginable aspect of color manipulation.

Photoshop includes a full set of tools for making color adjustments. You can find them all on the Image>Adjustments submenu (see Figure 5.1). Some of these terms, such as Brightness/Contrast, might be familiar to you; others might not. Don't worry. You'll learn about them all in this hour.

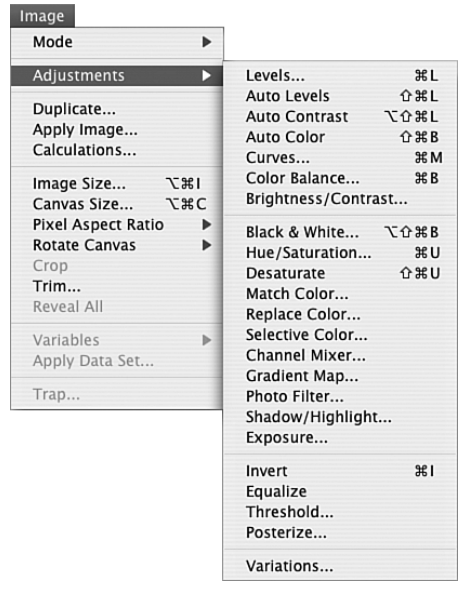

FIGURE 5.1
The Adjustments submenu gives you all the tools you'll need.

Evaluating Your Color Adjustment Needs

Before you start to adjust color, you need to evaluate what kind of color you have in the picture and how you'll eventually use the image. You learned about color models and color modes in the last hour, so you know that RGB color is the kind that is displayed on computer screens and CMYK color is the kind that is printed. If you're going to be adjusting the color in a picture, it makes sense to adjust it according to the way it will be displayed. If your picture is going on a web page, you should work in RGB mode. If it's going to be printed on a four-color process commercial press, work in RGB to start with, but make your final adjustments (if any are needed) after you convert to CMYK mode. If you're printing on a home/office inkjet printer, stick with RGB, even though your printer uses CMYK inks. These printers are designed to make the conversion internally. Other kinds of color printers, such as color lasers, work fine with CMYK. If the picture is going to end up in grayscale, forget about trying to make the sky a perfect blue. Change the mode to Grayscale and make the contrast perfect instead. Just keep these few rules in mind and you won't go wrong. Table 5.1 will help you keep these options sorted out.

TABLE 5.1 Color Adjustment Matrix

Adjust Color In	If Output Is
RGB	Computer screen, web, or inkjet printer
RGB first, and then CMYK	Process color print
Grayscale	Black-and-white print

Adjusting by Eye with Variations

The most obvious way to make a color adjustment is to compare before and after views of an image. In Photoshop, the tool for doing this is called Variations. It's the last item on the Image>Adjustments submenu. Variations combines several image adjustment tools into one easy-to-use system that shows you thumbnail images that are variations on the original image. You simply click the one that looks best to you. You can choose variations of hue and brightness and then see the result (which Photoshop calls **Current Pick**) compared to the original.

Something Missing?

Did you know?

If Variations doesn't appear on the Adjustments submenu, check the Image>Mode submenu to make sure you're in 8-bit color mode and that you're not using Lab or Indexed Color mode. If those settings are OK, the Variations plug-in might not have been installed. Consult the Photoshop manual for information about using plug-in modules.

Figure 5.2 shows the Variations dialog box. (See it in color in the color insert.) When you first open it, the Current Pick is the same as the original image because you haven't yet made changes. You can set the slider to the left (Fine) or right (Coarse) to determine how much effect each variation applies to the original image. Moving it one tick mark in either direction doubles or halves the previously selected amount. The finest setting makes changes that are so slight as to be almost undetectable. The coarsest setting should be used only if you're going for special effects and want to turn the entire picture to a single color. The default (middle) setting is the most practical for normal adjustments.

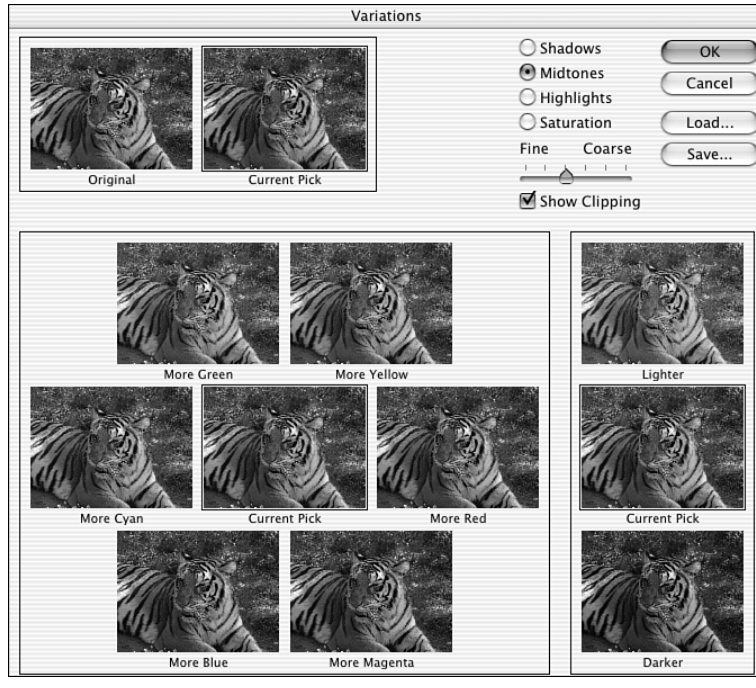

FIGURE 5.2
The seven thumbnails at the lower left adjust hue, whereas the set of three on the right side adjusts brightness.

Adjusting Shadows, Midtones, Highlights, and Saturation

When you use Variations to adjust a color image, you have the option of individually adjusting shadows, midtones, highlights, or overall color saturation. **Shadows**, **midtones**, and **highlights** are Photoshop's terms for the darks, middle tones, and light tones, respectively, in the picture (or what would be black, gray, and white in grayscale). When you correct them with Variations, you change the color (hue) of the shadow, midtone, or highlight. Saturation affects all of them at once, increasing or decreasing the intensity of the color, although not changing it.

When you choose Shadows, Midtones, or Highlights in the Variations dialog, you adjust the hue and brightness of only that part of the picture. The advantage here is that you can adjust the midtones one way and the highlights or shadows another way, if you choose. Each setting is independent of the others, and you can, for example, set the midtones to be more blue, thus brightening the sky, yet still set the shadows to be more yellow, offsetting the blueness that they possess inherently.

When a highlight or shadow value is adjusted so much that it becomes pure white or pure black, that's referred to as **clipping**. Clicking the Show Clipping box displays a neon-colored preview of areas in the image that will be clipped by the adjustment, so that you can try to minimize the amount of clipping that takes place. Clipping doesn't occur when you adjust midtones.

Remember, as you learned in Hour 4, "Specifying Color Modes and Color Models," **hue** refers to the color of an object or selection. **Brightness** is a measurement of how much white or black is added to the color.

Choosing Saturation changes the strength of the color in the image; the setting choice is simply for less or more color strength. In Figure 5.3, we're adjusting the saturation of this photo. Remember that you can apply the same correction more than once. If, for instance, less saturation still leaves more color in the image than you want, reduce the saturation again to get even less. (Don't confuse saturation with brightness. Saturation changes the amount of color. Brightness adds light.)

FIGURE 5.3
Less saturation gives you a duller image. More saturation gives you a more intense one.

Try It Yourself

Adjust an Image Using the Variations Command

Learning to work with the Variations dialog box is an excellent way to understand how colors work.

1. Open any color image. Choose Image>Adjustments>Variations.
2. Set the radio buttons according to what you want to adjust: Shadows, Midtones, Highlights, or Saturation.
3. Use the Fine/Coarse slider to determine how much adjustment to apply.
4. Watch the Original and Current Pick thumbnails as you create the desired variations by clicking the appropriate thumbnails. The following are some tips for getting the effect you want:
   - To add color, click the appropriate color thumbnail.
   - To reduce a color, click its opposite on the color wheel. To reduce magenta, for example, click green.
   - To adjust the brightness, click the thumbnail for a lighter or darker image.
   - If you're not sure exactly what you need to do, simply click the image that looks most correct to you.
   - If you think you might have overdone your corrections and want to go back to the original image, press Option (Mac) or Alt (Windows) to change the Cancel button to a Reset button. Clicking the Reset button restores the settings to zero and reverts to the image saved prior to changes. (Note: This works with all adjustment dialog boxes.)
5. Click OK when you're done or click Cancel to undo all your adjustments.

Saving and Loading Corrections

Two other buttons appear in this dialog box, and in the other adjustment dialog boxes as well. These are the Load and Save buttons. They can save you a lot of time and effort if you have a whole series of pictures that need the same kind of corrections. Perhaps you used your digital camera to shoot several outdoor pictures with the same lousy light conditions. Maybe your scanner tends to make everything a little more yellow than you want. After you determine the settings that correct one

picture perfectly, you can save those settings and then load them each time you want to apply them to another picture.

Click the Save button, and you'll see a typical dialog box that asks you to give your settings a name. You might call them `foggy day fix` or `scanner correction`. Then, when you need to apply them to another picture, use the Load button to locate and open the appropriate setting file, and your corrections will be made when you click OK in the dialog box.

Making Other Adjustments

As you've seen, Variations is the quick way to adjust color, but sometimes it doesn't give you enough control. Other times you just want to experiment. Maybe you have a picture that's mediocre, but if you play with the colors in it and beef up the contrast, you can make something out of it. These are the times when you'll want to work with individual adjustment settings.

Consulting the Histogram

Photoshop's Histogram palette was once a dialog box. It doesn't actually do anything by itself, but if you learn how to use it, you can save yourself lots of time. If you ever took a course in statistics, you already know that a histogram is a kind of graph. In Photoshop, it's a graph of the image reduced to grayscale, with lines to indicate the number of pixels at each step in the grayscale from 0 to 255.

You might wonder why this is important. The main reason is that you can tell by looking at the histogram whether there's enough contrast in the image to allow you to apply corrections successfully. If you have an apparently bad photo or a bad scan, studying the histogram will tell you whether it's worth working on or whether you should throw away the image and start over. If all the lines are bunched up tight at one end of the graph, and the image isn't *supposed* to be very dark or very light, you probably can't save the picture by adjusting it. If, on the other hand, you have a reasonably well-spread-out histogram, there's a wide enough range of values to suggest that the picture can be saved. Watch out for gaps in the middle of the graph, and for ends that cut off suddenly rather than tapering down to zero. Figure 5.4 shows the histogram for a reasonably well-exposed photo.

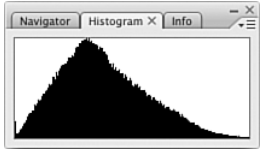

FIGURE 5.4
There are plenty of lights and darks in the picture this histogram represents.

The Histogram command has another use, which is to give you a sense of the tonal range of the image. This is sometimes referred to as the key type. An image is said to be low key, average key, or high key, depending on whether it has a preponderance of dark, middle, or light tones, respectively. A picture that is all medium gray would have only one line in its histogram, and it would fall right in the middle.

All you really need to know is that, when you look at the histogram, you should see a fairly even distribution across the graph, if the image is intended to be an average key picture. If the picture is high key, most of the lines in the histogram are concentrated on the right side with a few on the left. If it is low key, most of the values will be to the left with a few to the right.

Adjusting with the Levels Dialog Box

Adjusting levels is a method of changing the brightness of an image. As you can see in Figure 5.5, the Levels dialog box has a copy of the histogram, along with some controls that you can use to adjust the values.

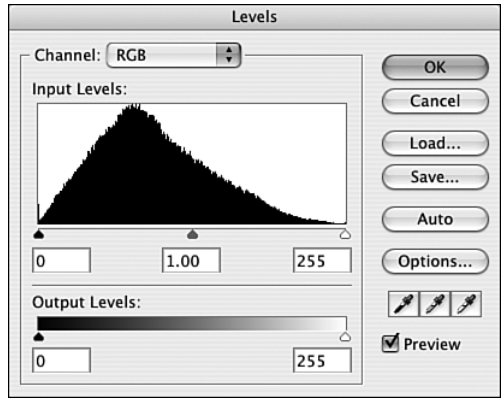

FIGURE 5.5
Be sure to check the Preview box so that you can see the effect of your changes.

Setting the **black point** (the point at the left of the histogram that represents absolutely saturated black) to match the concentration of darkest levels in the image, and setting the **white point** (at the right, indicating completely unsaturated white) to match the concentration of the lightest levels in the image, forces the rest of the levels to reassign themselves more equitably. The photo I'm using in these examples happens to be quite dark, but there's still ample detail. (You can download the uncorrected image from the book's website; the file is called `chinadoll.jpg`.)

Try It Yourself

Adjust Brightness Using Levels

When the colors are right, but the photo seems dull or dark, adjusting the brightness helps. Follow these steps to do that using Levels:

1. Choose Image>Adjustments>Levels, or press Cmd-L (Mac) or Ctrl+L (Windows).
2. Click the Preview box so that you can see your changes in the image window. Just for fun, you can watch the Navigator and Layers palettes change, too.
3. Create the desired level adjustments by moving the three sliders below the histogram to the left or right. The following are some tips for getting the effect you want:
   - To set the black point (the darkest black) in the image, move the slider at the left side of the Input Levels histogram to the point at which the dark lines begin to cluster.
   - Set the white point (the whitest tone) by moving the right Input Levels slider to the point where the light pixels begin to rise.
   - Adjust the midrange by watching the picture while you move the Input Levels middle slider left or right. Figure 5.6 shows the settings for this picture.

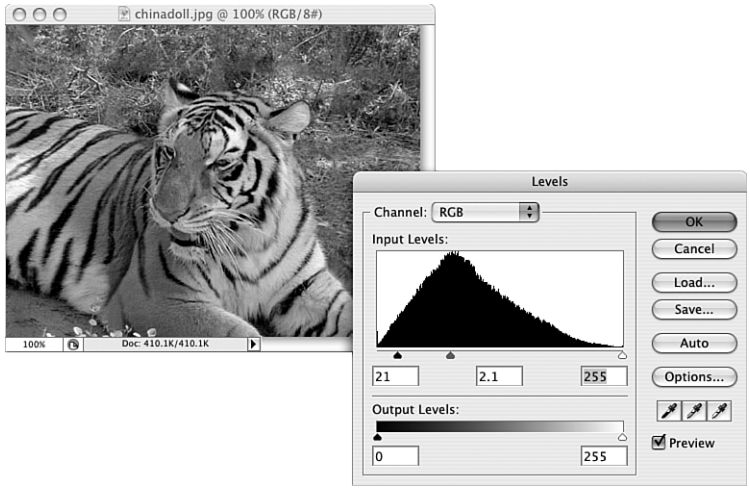

FIGURE 5.6 Adjusting the darks helps bring out shadow detail.

4. To adjust the contrast in the image, use the sliders on the Output Levels bar. The black slider controls the dark tones; moving it toward the center lightens the image. The white slider controls the light tones; moving it toward the center darkens the image.
5. Click OK when you're done. My corrected version is included in the color photo section. It's called `China Doll`, Color Figure 5.6.

By the Way

Channeling Colors

In a color image, you can adjust the composite RGB or CMYK color image, or individual colors, by using the Channels pop-up menu. For now, stay with the composite. (You'll learn more about channels later in this hour.)

You can also use the Eyedroppers to adjust the levels. Click the white Eyedropper (on the right) and click the lightest part of your image. Then click the dark-tipped Eyedropper (on the left) to select it and click the darkest point on the image. If you're working on a grayscale image and there's an area in the image that seems to be right in the middle, click it with the midrange Eyedropper (in the middle). Avoid using the midrange Eyedropper in a color image unless it has an area that's supposed to be a neutral gray—neither reddish (warm) nor bluish (cool); if you click in an colored area, Photoshop will adjust all the image's colors so that the area you clicked in doesn't have any color.

Did you Know?

You "Auto" Try it

If you click Auto in the Levels dialog box or choose Auto Levels from the Image>Adjustments menu, Photoshop adjusts the levels based on its evaluation of the tonal range. However, this is usually not satisfactory. Try it, but be prepared to undo.

Adjusting with the Curves Dialog Box

Adjusting curves is much like adjusting levels, although a bit subtler. You can use the Curves dialog box instead of the Levels dialog box to adjust the brightness. The big difference is that, instead of adjusting at only three points (black, middle, and white), you can adjust at any point (see Figure 5.7).

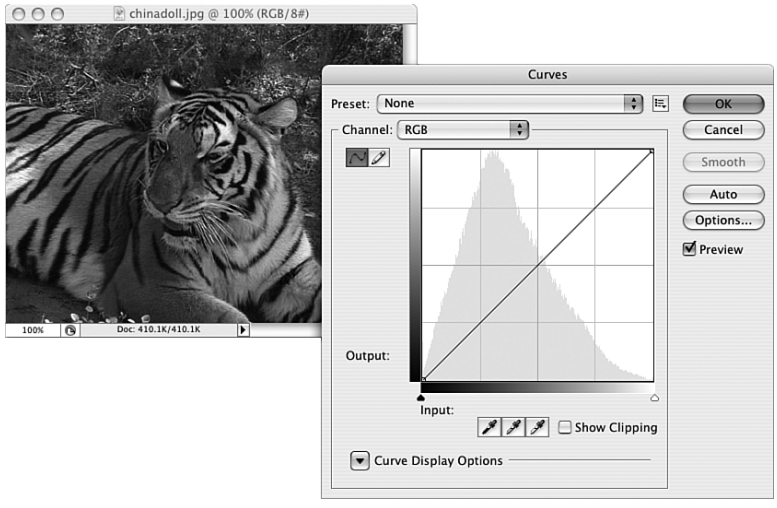

FIGURE 5.7
On this kind of graph, the zero point is in the middle.

When you open the Curves dialog box, you won't see a curve. Instead, you see a different kind of graph, one with a grid and a diagonal line. The horizontal axis of the grid represents the original values (input levels) of the image or selection, whereas the vertical axis represents the new values (output levels). When you first open the box, the graph appears as a diagonal line because no new values have been mapped. All pixels have identical input and output values. As always, be sure to check the Preview box before doing anything else so that you can see the effects of your changes.

As with the Levels dialog box, you can click Auto or use the Eyedroppers to adjust the values. Because the Curves method gives you so much more control, you might as well take full advantage of it. Hold down the mouse button and drag the cursor over the portion of the image that needs adjusting. You'll see a circle on the graph at the point representing the pixel where the cursor is. If there are points on the curve that you don't want to change, click them to lock them down. For instance, if you want to adjust the midtones while leaving the darks and lights relatively untouched, click the light and dark points on the curve to mark the points at which you want to stop making changes. Then, drag the middle of the curve until the image looks right to you. Dragging up lightens tones, whereas dragging down darkens them. Figure 5.8 shows what this actually looks like (this figure is also shown in the Color Gallery). To get rid of a point that you have placed, click and drag it off the grid.

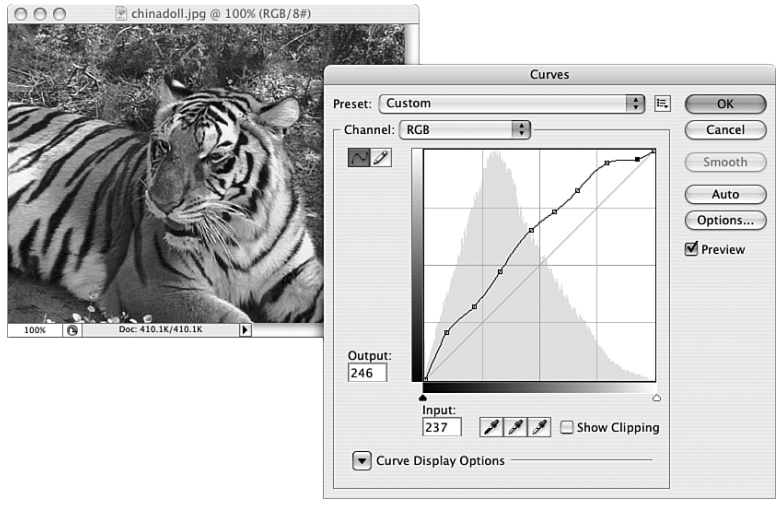

FIGURE 5.8
You can add up to 16 points on the curve.

Did you know?

A Fine Thing

To see the curves displayed in a finer grid, press and hold Option (Mac) or Alt (Windows) and click the grid.

Adjusting with the Color Balance Dialog Box

To really understand color balance, you have to look at the color wheel. In case you don't remember the order of the color wheel, just flip to the Color Gallery and take a look at the example provided.

Every color on the wheel has an opposite. If you follow the line from one color through the center of the wheel, you reach its opposite. Cyan is opposite to red; green is opposite to magenta; and yellow is opposite to blue. When you use the Color Balance dialog box to adjust colors in a picture, you're adding more of the color opposite to the one you want to reduce. Increasing the cyan reduces red. Increasing red reduces cyan, and so on, around the wheel.

Figure 5.9 shows the Color Balance dialog box. Color Balance is intended to be used for general color correction rather than for correcting specific parts of an image, although you can use it that way by selecting only the part to correct. It's especially helpful if you have a scanned image that is off-color, such as an old, yellowed photograph. It's very simple to apply the Color Balance tools to remove the yellow without altering the rest of the picture.

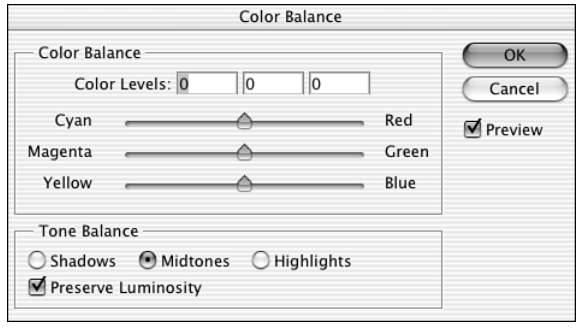

FIGURE 5.9
Move the sliders in the direction of the color you want to add.

In addition to Color Balance, you can use the sliders to adjust tone balance. As with the Variations dialog box described earlier, you can concentrate your efforts on adjusting shadows, midtones, or highlights by clicking the appropriate button.

Try It Yourself

Apply Color Balance

Color balance can rescue pictures that have faded, and it can turn red roses blue or blue ducks red. It's fun to play with.

1. Select the image or portion of the image to correct. Open the Color Balance dialog box by choosing Image>Adjustments>Color Balance or pressing Cmd-B (Mac) or Ctrl+B (Windows).
2. Choose Shadows, Midtones, or Highlights. Generally it's advisable to start with midtones, if you are correcting the whole picture, because the midtones comprise 90% of an image.
3. Check Preserve Luminosity so that you don't change the brightness of the image as you shift colors. If maintaining the brightness isn't important, don't enable the check box. Be sure to select Preview so that you can see how your changes affect the image.
4. Move the sliders to adjust the colors. The numbers in the boxes change to indicate how much of a change you are making. They range from 0 to +100 (toward red, green, and blue) and from 0 to –100 (toward cyan, magenta, and yellow).
5. Adjust the shadows and the highlights; repeat the corrections until the image looks correct to you.
6. Click OK to apply the changes.

If Color Balance doesn't seem to do what you want, undo it.

Adjusting with the Hue/Saturation Dialog Box

The Hue/Saturation dialog box is a very powerful tool with a slightly misleading name. Sure, it lets you adjust the hue (colors in the image) and the saturation (the intensity of the colors), but it also gives you control over the lightness.

First, look at the controls in the Hue/Saturation dialog box (see Figure 5.10). The first pop-up Edit menu lets you select either a single color to adjust or the Master setting, which adjusts all the colors in the image or selection at once. For now, work with the Master setting. Check Preview so that you can see the effects of your changes in the picture you're working on.

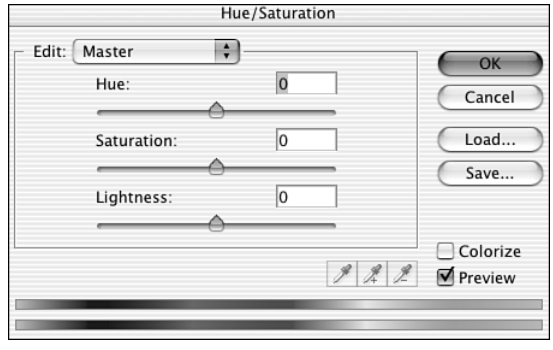

FIGURE 5.10 Small adjustments to Lightness and Saturation are usually all that's needed.

There are three sliders: Hue, Saturation, and Lightness. The Hue slider moves around the color wheel. With Master selected, you can move all the way from red (in the middle of the slider), left—through purple to blue or blue-green—or right through orange to yellow and to green.

The Saturation slider takes you from 0%, in the center, to 100% saturated (pure color, with no gray) on the right, or 100% unsaturated (no color) on the left.

The Lightness slider lets you increase or decrease the brightness of the image, from zero in the center, to +100 on the right, or –100 on the left.

As you move these sliders, watch the two spectrum strips at the bottom of the window, as well as the image itself. The upper strip represents the current status of the image, and the lower one changes according to the slider(s) you move. If you move the Hue slider to +60, for example, you can see that the reds in the picture turn quite yellow and the blues turn purple. In effect, what you are doing is skewing the color spectrum by that amount. If you move the Saturation slider to the left, you'll see the lower spectrum strip become less saturated. If you move the Lightness slider, you'll see its effects reflected in the lower spectrum strip as well.

Light Is Bright

By the Way

Lightness is technically the same as brightness. The Hue, Saturation, Brightness (HSB) color model uses these terms to define a color, as opposed to the RGB and CMYK models, which define it as percentages of the component primaries. These primaries, of course, are red, green, and blue for RGB, and cyan, magenta, yellow, and black for the CMYK model.

Instead of selecting Master from the pop-up menu, if you select a color, the dialog box changes slightly, as you can see in Figure 5.11. The Eyedroppers are now active, enabling you to select colors from the image, and adjustable range sliders are centered on the color you have chosen to adjust. You can move these back and forth to focus on as broad or narrow a range within that color as you want. This might not seem like a big deal, but it's really very powerful, especially if you want to create a pink tiger, or maybe a blue one.

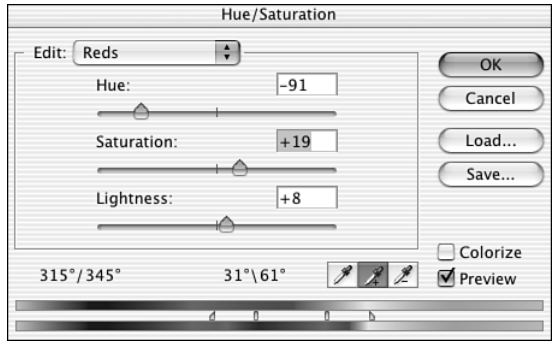

FIGURE 5.11 Click and drag to move the sliders. You can extend the range of colors to be affected by dragging the edges of the range selector between the two color bars.

Try It Yourself

Adjust an Image Using the Hue/Saturation Dialog Box

This powerful tool is best applied in small doses.

1. Open the dialog box by choosing it from the Image>Adjustments menu or by pressing Cmd-U (Mac) or Ctrl+U (Windows). Click Preview to see your changes as you make them.
2. Use Master (the default setting) to adjust all the colors, or use the pop-up menu to select the color you want to adjust.

3. Create the desired adjustments by moving the three sliders to the left or right. The following are some tips for getting the effect you want:
   - Drag the Hue slider left or right until the colors look the way you want. The numbers displayed in the Hue text box refer to the degree of rotation around the color wheel from the selected color's original location.
   - Drag the Saturation slider left to decrease the saturation of the colors and right to increase it.
   - Drag the Lightness slider to increase or decrease the lightness of the image.
4. Click OK when you're done.

Adjusting with the Brightness/Contrast Dialog Box

Photoshop CS3's Brightness/Contrast function isn't new, but it's definitely improved. If you need to make a simple adjustment to the tonal range of an image that scanned too dark, the Brightness/Contrast dialog box (choose Image>Adjustments> Brightness/Contrast) seems like an easy way to accomplish just that (see Figure 5.12), right? However, in all previous versions of Photoshop, Brightness/Contrast applied the same correction throughout the image, meaning that if you made the image brighter, you ended up with gray shadows and stark white highlights along with your nice, bright midtones. Now, however, that's all changed; Brightness/Contrast now separately corrects the dark, middle, and light values.

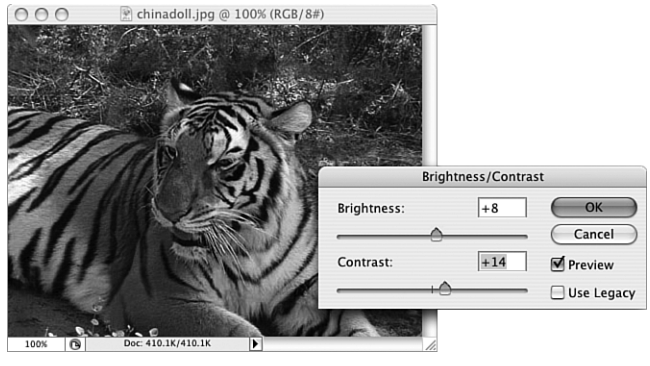

FIGURE 5.12 Use the sliders to adjust the brightness and contrast.

Although the Brightness/Contrast dialog box doesn't give you the same control that you would have if you made the adjustments using Levels or Curves, or even the

Variations dialog box, it's quick and easy. Sometimes it's all you need. Many images are improved by just raising the brightness and contrast by a couple of points. As always, be sure to check the Preview box so that you can see the effect your changes have on the image.

Dragging the sliders to the right of the middle point increases brightness or contrast. Dragging them to the left decreases it. If you're not happy with the results you get with this tool, undo your changes and use the Variations dialog box, or Levels or Curves, to adjust the brightness and contrast.

If you encounter a situation in which you want to make everything in your picture lighter or darker, you can revert temporarily to the old version of the Brightness/Contrast function by clicking the Legacy check box.

Correcting the Shadows and Highlights

One of the coolest features in Photoshop is the Shadow/Highlight dialog box. It allows you to control the amount of highlight and shadow on an image without changing the contrast. If you apply it to the tiger photo, you can let her sit in deeper shade without changing the intensity of her stripes, or turn up the sunlight without washing the color out of her pale cream fur. Be sure to check the Show More Options box to open the full set of sliders, as shown in Figure 5.13. See the corrected tiger in Color Plate 5.12, and compare her to the original picture in Color Plate 5.6.

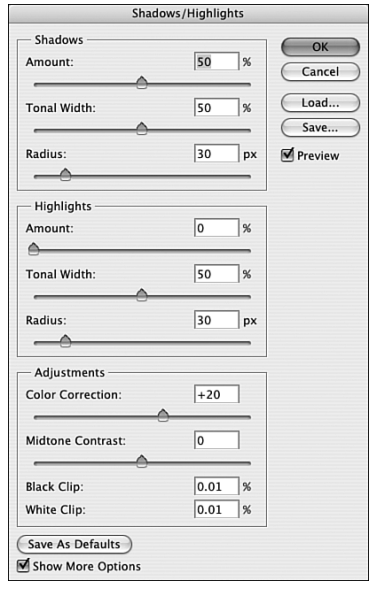

FIGURE 5.13 Experiment with these sliders on both high-contrast and low-contrast images.

Photo Filters

When a photographer wants a special effect, he or she might use a colored filter over the camera lens. With this feature, you can do the same thing to any image, whether from a camera, scanned, or created from scratch. In Figure 5.14, I have expanded the list of filters so you can see the many options available. Serious photographers will recognize the numbers after the warming and cooling filters, because they are the same as on the glass filters you might buy at a good camera store. Use the slider to control the strength of the filter. Typically, you would use no more than 10–20% to warm up daylight or to take the excess yellow out of an indoor shot. To open the Photo Filter dialog box, follow this path: Image>Adjustments>Photo Filter.

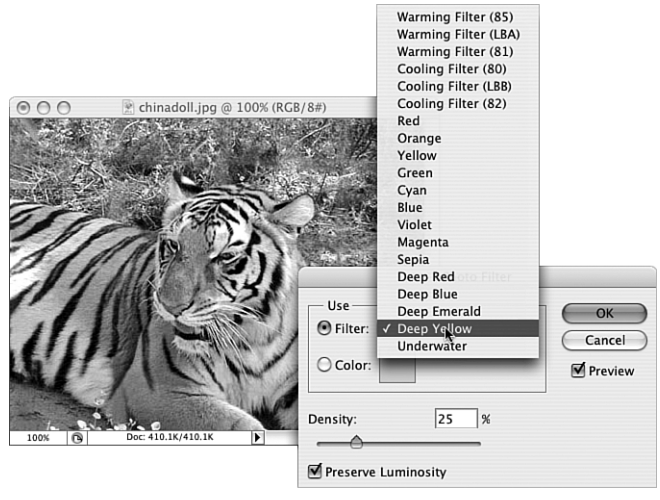

FIGURE 5.14
You can also use any color as a filter.

Other Menu Options

It's almost time to wrap up your tour of the Adjustments submenu. Here's a look at a few commands we haven't covered yet that you might find useful.

Auto Contrast is occasionally helpful. It automatically maps the darkest and lightest pixels in the image to black and white, causing highlights to appear lighter and shadows darker. It might not be the best way to make the necessary adjustments, but, if you are in a hurry, it can save you some time.

There's another Auto tool: Auto Color. This tool, quite simply, analyzes the color in an image and makes an educated guess as to what it should be. If you're easily satisfied, it might be all the correction you ever need. As for me, I like things perfect, and Photoshop's sense of color is often different than mine.

Desaturate removes all of the color from an image, without changing the color mode. If you want a quick look at how something will reproduce in black and white, this is the command to use. Then, simply undo it to go back to the colored version.

Preserving the Original with Adjustment Layers

An important point to remember about color correction is that you can apply it to the whole picture, to a selected single area, or to all but a selected area. When you apply a correction to the whole picture, it might improve some parts and make others worse, so you really need to look carefully at the end result and decide whether the good outweighs the bad.

Fortunately, there's an easy way to apply a correction and then change your mind. One of the best features of Photoshop is the capability to work in layers. (You'll learn all about layers in Hour 11, "Using Layers.") For now, you can think of layers as sheets of transparency film that you place over your image and paint or paste on. If you like what you do, you can merge the layers so that the additions become part of the image. If not, you can throw them away and try again. In addition to the layers that you paint on, Photoshop lets you apply **adjustment layers**. These work like normal layers except that instead of holding paint or pasted pictures, they hold the color adjustments that you make to the image.

There are a couple of ways to add an adjustment layer to your image. (This is Photoshop. You'll soon find that there are several ways to do almost anything you can think of.) First, and most logically, you can choose New Adjustment Layer from the Layer menu shown in Figure 5.15. They're also on a pop-up menu you reach by clicking a button at the bottom of the Layers palette (look for the button with the half-black, half-white circle) .

Try It Yourself

Using the Adjustments Layer Submenu

To open an adjustment layer:

1. Click the black-and-white circular icon at the bottom of the Layers palette or choose Layer>New Adjustment Layer (see Figure 5.15).

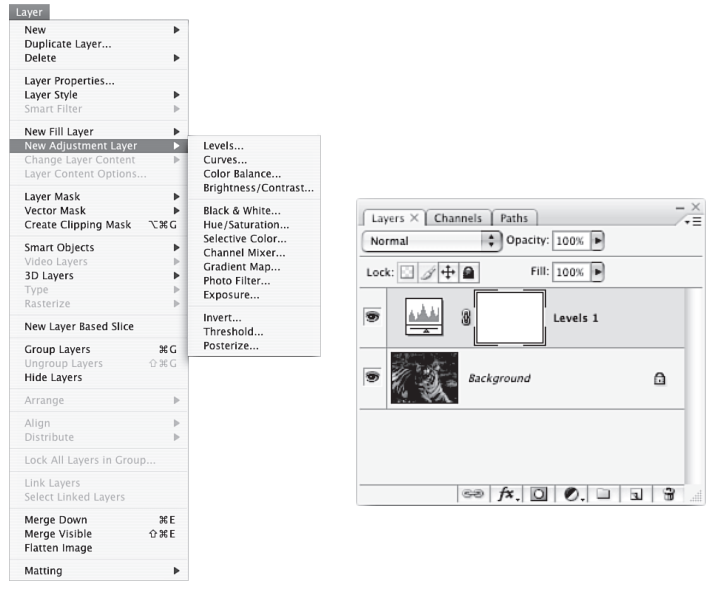

FIGURE 5.15
The New Adjustment Layer submenu and the Layers palette.

2. Select the particular kind of adjustment that you want to make from the pop-up menu. Click OK to open the appropriate adjustment dialog box.

3. Make whatever adjustments are necessary. You can delete the layer if you're not pleased with the changes, or change the layer opacity to effectively change the strength of the corrections you have made.

Understanding Channels

Channels are another way of looking at color. Each image has one or more channels, with the number depending on the color mode chosen. CMYK has four separate channels plus a composite. RGB mode has three plus the composite. Each channel holds information about a particular color element in the image. Think of individual channels as something like the plates in the printing process, with a separate plate supplying each layer of color. You can often create interesting textures or special effects by applying filters to just one channel. Figure 5.16 shows the Channels palette (twice) with RGB and CMYK channels.

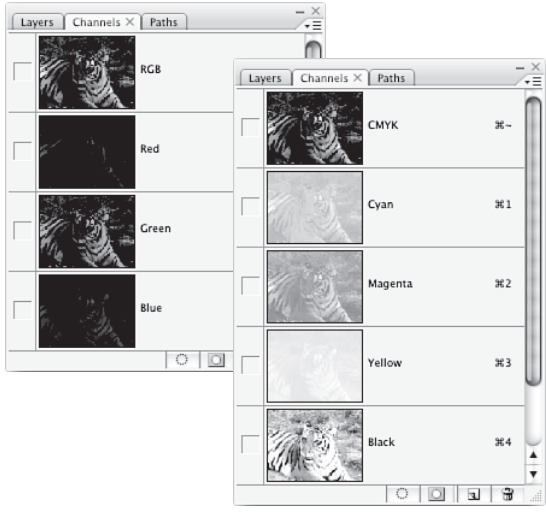

FIGURE 5.16
You can set preferences to show channels in grayscale or in their colors.

There are also alpha channels, which have several uses. They are used to define the placement of spot colors (Pantone, Focoltone, and so on). They also contain the maps for masks you create and want to save with the image to which you have applied them.

Summary

In this hour, you looked at working with color. Variations make simple, "by eye" adjustments, letting you choose from differently enhanced thumbnails. Levels and curves apply adjustments more scientifically. You now know how to make the sky a perfect blue and the grass a greener green. You know that adjusting levels lets you set limits for dark, middle, and light tones in an image. You have learned about color balance and how to apply changes to hue and saturation. You have seen how to change the brightness and contrast of an image.

Color adjustment is one of Photoshop's most-used features, and one that you'll rely on whenever you need to touch up a photo or a scanned image. Practice with it as much as you can, using your own favorite images.

Workshop

Q&A

Q. ***Levels and Curves seem to do more or less the same thing. How do I know which to use?***

A. If the picture seems to have the right color balance (not too red, green, and so on) but is too dark or light, use Levels. If the colors aren't right, adjust the Curves for individual colors and for the RGB (full-spectrum) channel.

Q. ***I have a sepia-tinted photo (brown tones) that I have scanned into the computer, but the scan came out yellow. Is there a way to get rid of the yellow cast without losing the sepia?***

A. The easy way is to convert it to grayscale so that you get rid of *all* the color. Then convert the image back to RGB. Open the Image>Adjustments>Curves dialog box. Instead of RGB on the Channels pop-up menu, select red and drag the curve up until you have added an appropriate amount of red. Then set the pop-up menu to green and drag the curve up until you have added enough of that color. Finally, set the pop-up menu to blue and drag down until you have removed the blue and achieved a reasonable amount of sepia. Experiment until you get the color you want, and then click OK.

Q. ***If the picture's going to be printed in black and white for a newsletter, do I really need to adjust the color balance and stuff?***

A. Always leave your options open. Adjust a *copy* of the picture in Grayscale mode, just to make sure that the contrast is good for reproduction. For that, you don't need to think about color. But keep a copy in color in case you want to put the same picture on a web page or do something else with it later.

Quiz

1. A picture came out too green. What should you do?

A. Open Variations and choose more red.

B. Open Variations and choose more magenta.

C. Say you took it in Ireland.

2. A picture was taken on a foggy day, and its colors look washed out. Is there any way to fix it?

   A. Increase the saturation.

   B. Lower the lightness.

   C. Paint over the picture with brighter colors.

3. How can you lessen the amount of change in the Variations dialog box?

   A. Hold Shift+Ctrl+P while you click the thumbnail.

   B. Use the Fine/Coarse slider.

   C. You can't.

Answers

1. **B.** On the color wheel, magenta is opposite green, so adding more magenta removes excess green.

2. **A.** Weak colors lack saturation. Increasing saturation slightly brightens the picture, but don't overdo it!

3. **B.** Moving the slider toward Fine lessens the amount of correction applied each time. (Trying to implement answer A would probably sprain a finger.)

Exercise

Download some of the photos from the Sams website. To get to the website, point your web browser to http://www.samspublishing.com/. In the Search box, type this book's ISBN without hyphens. On the book's main page, find the link to the download page. Then see how much further you can go. Turn a cloudy day into a sunny one and then reverse it. Experiment. Try your hand at changing the colors by eye, and then see whether you can duplicate your efforts by using the histograms.