

## EXCERPTS FROM CHARLES CRAMER'S PHOTOSHOP BOOKLET

Here are some excerpts from my 70 page "Photoshop Techniques" booklet that you might find useful. The emphasis here is on the new CS4 interface concerning the curves adjustment layer. This is just a summary of these ideas, as it is really intended as a refresher for those who have previously survived one of my workshops...

## PREPARING YOUR IMAGE FOR PHOTOSHOP

Whether you scan film, or RAW develop a digital capture, you have the ability to adjust your image before opening it in Photoshop. Some counsel that, since you'll be working in 16 bit—just use default settings for everything, with no individual "tweaking". (Who are these people?) I disagree! This is especially true with RAW files. A RAW file is basically straight off the camera sensor, and is tremendously malleable. You can adjust things like color balance and exposure much more effectively in RAW development. And, especially now, with the localized adjustments available in ACR (Adobe Camera RAW) and Lightroom, some will say that you don't even need Photoshop anymore! (There they go again...) But, even with these wonderful new controls, I still always bring the image into Photoshop. I have more control and power over the image in Photoshop, and can accomplish finer adjustments, especially with fine-tuning selections that use masks.

Since this booklet deals with Photoshop, I won't go into much detail about scanning and RAW developing, but do have some guidelines.

**1. SHADOW AND HIGHLIGHT ENDPOINTS** Be very conservative in setting the "endpoints". No clipping please! (Ansel would be *very* upset). You can do the fine adjustments later in Photoshop.

**HIGHLIGHTS** I would avoid clipping (where some tones are at RGB level 255...or higher!) in almost all cases. I say almost, because some specular highlights (like sun-glints off of water) are so bright that we just have to let them be clipped (RGB level 255, which would print as paper white—no detail at all). Also, beware of brightly saturated colors, like poppies. Although you wouldn't call a poppy a "highlight", the red channel can be so bright that it can easily clip, and there goes your detail. So check the RGB readout, and make sure none of the three read 255.

With *slightly* over-exposed RAW images, Adobe's ACR and Lightroom can both work wonders. If even one channel has some data in those highlights, Adobe can resurrect the remaining channels, saving your....highlights! It's the little slider marked "recovery". In the process of adjusting the RAW file, you will, of course, pay great attention to any clipping in the histogram, and reduce the exposure and/or invoke the recovery slider when needed. If all channels are clipped, then even Adobe can't help. That's why you want to set your digital camera so that any blown highlights will "blink" in the camera LCD, alerting you to this fact. I've seen some wonderful images in workshops that initially look great, but upon closer inspection have some completely clipped highlights, rendering them worthless!

So—watch those highlights! I call highlights the most important part of the image...

**SHADOWS** With film, it's easy to avoid any clipping of shadows, so please do! With RAW files, it's not quite as easy. Some tones are just so much darker than anything else in your image that it's best just to let them be completely black (level 0). But, if you have lots of dark tones that have detail, then please don't clip. Removing the shadow clipping may look washed-out and "blah" (the technical term), but we have much more control over the shadows in Photoshop, and we'll fix it there. Later in this booklet, you'll learn about the wondrous "Sudden black" curve that can help rescue even very muddy images. You can't do this in RAW developing—so in images with important shadow detail, no shadow clipping, please. (We will be clipping them later in Photoshop...)

One little caveat about shadows in ACR and Lightroom. The "fill light" slider can often work wonders to brighten those dark tones, but it can also fail miserably! Here's a little detail from a Southwest canyon, showing some very dark reds and greens. For some reason, when I try to lighten this with the fill light adjustment, it gets terribly confused and posterizes the tones, with the slider at a lowly 25 (Figs 2.1 and 2.2 on next page).



Fig. 2.1 No "fill light" adjustment



Fig. 2.2 "Fill light" at a measly 25

So, be very careful with the fill light, and apply it conservatively. You can bring a dark file into Photoshop and lighten it there using the Shadow/Highlight controls (discussed later). I've almost never seen artifacts from Shadow/Highlight adjustments.

**2. COLOR BALANCE** Getting the color balance of your image just right can be an iterative process. The problem is human vision—our brains will start adapting to whatever we look at, and the longer we look—the better it will start to look! We need to see our image in relation to other images to fully assess the color balance. Looking at only one image onscreen can be very deceptive. So I advise getting the colors looking good initially, but realize that they might need more adjusting later on.



Fig. 2.3 Ice and Snow on Tioga Lake

With RAW files, it can be fairly easy to get a good color balance. Clicking with the "white balance selector" on a neutral can often give very pleasing results. But it still seems to usually need a little manual adjustment of the color temperature. Here's a photograph where the white balance tool was useless. Snow is normally exceedingly neutral in color, but this was near sunset, with golden colors in the ice, but blue sky reflected in the snow. So, it was easy to neutralize either the snow or the ice—but I wanted something in between. I wanted both warm and cool colors, so I had to adjust this manually. And it took several prints to determine just what looked best.

Adjusting the color balance is much more effective with a RAW file. Once it's been developed into Photoshop you can still make big changes, but it's usually more work. So be sure to get your colors fairly close to what you think is right in the RAW development process.

**3. COLOR SATURATION** One of the great controls in ACR and Lightroom is Vibrance. This is like a "smart" saturation, in that it will add saturation without making the most colorful colors go nuts. You could say it increases the differences between the colors. So I usually add some vibrance in RAW development, but err on the side of too little. Now that Photoshop CS4 has the "vibrance" adjustment, you can easily do the fine-tuning there.

It's also important to not get carried away with fancy and elaborate changes in the hue and saturation of particular colors. It's really easy now with ACR or Lightroom controls! (Also with various scanning software). But, I have usually come to regret it. After working on an image in Photoshop for awhile, I'll invariably notice that something doesn't quite look right, and I can't seem to fix it. I then find that the problem was that I changed the hue of a color in scanning or RAW development—and it doesn't look so good after extended viewing. I'm not saying never to do this, because I do. But just be fairly conservative with those changes. Like all the adjustments discussed, better to err on the side of too little. Once you're in Photoshop, it's usually easier to add more, than to subtract. This is especially true with contrast. So keep the endpoints very conservatively placed, even flat looking. In Photoshop, you can place the endpoints with more finesse.

## PHOTOSHOP CS3 AND CS4

Although CS4 provides some great new features (like Vibrance, easier cloning, and content-aware scaling), the main changes are in the interface. And this is a **major** change. Prior to CS4, adjustment layers were "modal", meaning that a dialog box popped open onscreen whenever you made adjustments. When this dialog box was open, you could only adjust what was in the box. If you wanted to change your curve adjustment layer to "luminosity" mode, you would have to close the dialog box to do so. With CS4, there are no more pop-up dialogs, which means, in the middle of fine-tuning the curve, you *can* change the mode to luminosity! This is very nice. But, it required Adobe to change many well-established shortcuts, especially with the curves adjustment. It is still possible to accomplish what you want, but it may require a few more key strokes. The good news is the new "finger" control in curves and Hue/Saturation adjustments. (This is also found in Lightroom, and called the "Targeted Adjustment Tool" or "TAT"). I'm afraid this will make using the curves control too easy! Perhaps even dilettantes will figure out how to use them!!! (Deep breath)... But, that's all for the good, as it is THE most powerful adjustment layer ever devised by Adobe.

## ADJUSTMENT LAYERS IN CS4

With CS3, it was very clear that you could open an **existing** adjustment layer (say a curve layer), mess around with it—and if you didn't like what you did, you would hit "cancel" to close the dialog, and trash your changes. It would revert to the state it was in before you messed with it. Or, if you liked the changes, you could hit "OK" and the dialog would close, saving those changes. (By "saving" the changes, I mean that the next time you opened the curve, it would start with those changes as a starting point. If you then changed the curve further, and clicked the preview on and off, it would compare these last changes to the last "saved" changes). CS4 has eliminated any pop-up dialog boxes—so how do we "cancel"? How do I say "OK"? And where the hell did the "preview" button go???

I don't think Adobe has explained these changes very well, especially about saying "OK". These are important questions for someone who likes to "mess around!" Curves can be finicky, and I'd hate to accidentally lose an effective adjustment.



Fig. 2.17 Both grayed out

All these questions can supposedly be answered by viewing the two little icons at the bottom right of any adjustment layer (highlighted by arrows in Fig. 2.16). When you first open an adjustment layer, but haven't done anything yet, these icons appear grayed out (Fig. 2.17). Because you haven't done anything, there's nothing to reverse or preview. But, as soon as you change something, both icons come to life.

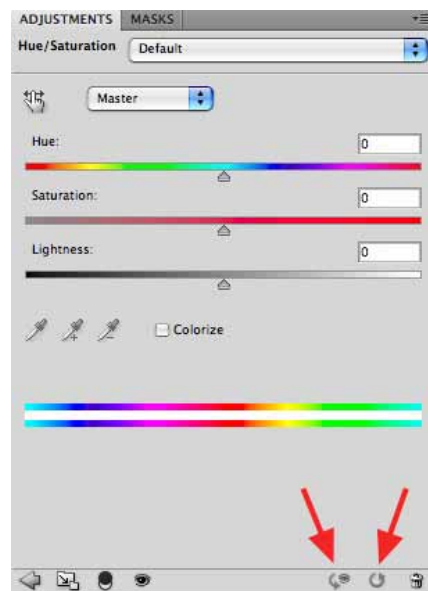


Fig. 2.16 The arrows point to our two brave little icons

The icon on the right (with the little eyeball) is the new "**un-preview**" button. I hovered over it, and the "tooltip" appeared which explains what it does (Fig. 2.18) "Press to view previous state (can also press / key)".

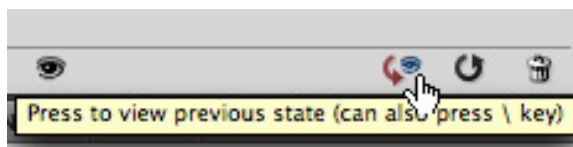


Fig. 2.18 The little eye is the new UN-PREVIEW button.

But, it's not a checkbox like the old preview button. To see the "before" state, you have to actively hold it down. As soon as you let go, it's back to the current state of the adjustment layer. As the tooltip says, you can also depress the backslash on your keyboard (more on that later).

The new "Completely Reset" button is the 3/4 circle with the arrowhead (Fig. 2.19). This will completely reset the adjustment as if you had opened it for the first time. (This icon is a tricky devil— it can become a half circle).

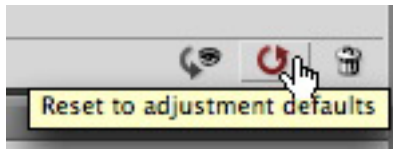


Fig. 2.19 The "RESET" button.

To review, we were last seen opening a new adjustment layer and making some changes. Both of these icons came to life. The "eyeball" is the preview button, and the 3/4 circle is the "reset to default" (default is like you just opened up a brand new layer). But how do we "close" the adjustment layer like we used to, so that this adjustment will be saved?

You need to **deselect** the adjustment layer, in one of two ways. Either select any other layer (adjustment or regular layer). Or click the "Toggle List" arrow (Fig. 2.20). This arrow is at the bottom left of any adjustment layer. This will hide and "close" the adjustment layer you were just tweaking. You could think of it as a close button!

To review again, if you didn't like what you did to the adjustment, you would click the 3/4 circle to reset (in this case to default), and then close the layer. If you liked what you did, then just deselect (close) the layer. That will "save" the changes.



Fig. 2.20 The "toggle list" arrow.

Because, if you now go back and reopen the adjustment layer, the preview button is grayed out! This means that the changes you just did have indeed been saved, and the preview button is waiting for you to do something new, that you can then toggle on or off with the little eye. Just like before in CS3.

But, as soon as you start tweaking something, we see this (Fig. 2.22). The reset button now looks different! It's a "half" circle. The tooltip explains that it will "Reset to previous state". So, we can mess with this adjustment, and if we don't like it, we hit the half circle, and the adjustment reverts to the previously changed state.

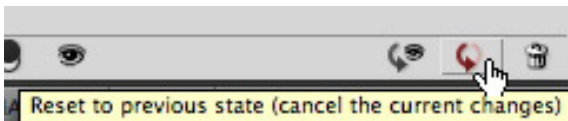


Fig. 2.22 Half-Circle means Reset to PREVIOUS state.



Fig. 2.21 Preview now grayed out, reset available

WHEW! Just read the above a few more times, or better yet, experiment yourself until you understand this.

A few notes. In CS3, the "reset" button was only available by holding down a modifier key. Now, it's almost too easy to reset! **Beware** when you see the 3/4 circle, and realize what it can do. Fear not the half circle, as it just undoes our messing around.

And about that backslash key. It's already used for turning on and off a quickmask. (If your adjustment layer has a mask (and it's the active layer), just **tap** the backslash key which will toggle on and off the quickmask. This was used in CS3). But, Adobe has added a feature where if you **hold it down**—longer than a "tap", it will display the "before" state of the adjustment layer. And you have to hold it down to see this. Confusing...



## THE CURVES ADJUSTMENT LAYER IN CS4

With the interface changes, and the new "finger" or "Targeted Adjustment Tool" (TAT), there are some new ways to do curves adjustments. I'll summarize them here, although explanations for these will also appear later in the booklet.

One way I love to explore an image is to move the cursor over various parts of the image, and see the little circle that shows where on the curve these tones are located (Fig. 3.19). To see this circle, select the TAT. Then just hover over various parts of the image and see where the circle ends up. (Unfortunately, there doesn't seem to be a shortcut for selecting and deselecting the TAT tool).

And—if you now click in the image on a particular tone, you will put a point on the curve, which you can then adjust by merely dragging up or down with the mouse! Move the cursor to other tones, click again and drag up to lighten, down to darken. This will make S curves very easy to create. Be careful when placing the points by clicking—because it's easy to accidentally move that new point when releasing the mouse.

Once you've initially created an S curve, you'll probably want to carefully fine-tune it. The best and most accurate way is to first select the desired point on the curve, and then use the arrow keys to move the point up or down, or left and right, one unit at a time. With CS4, it is now safe to select these points using the mouse. In CS3 or before, unless your mouse was EXACTLY on top of a point—you would inadvertently move it in the process of selecting it. But now that's fixed! You can be a little off with your aim with the mouse, and CS4 is now smart enough to realize you want to first select the point in its current position, before moving it.

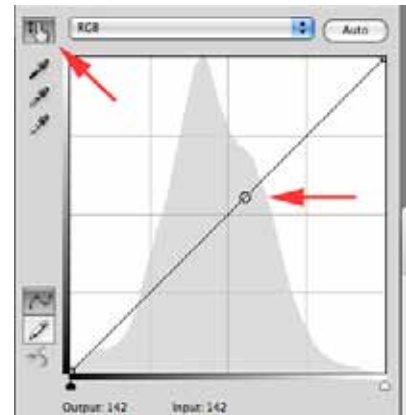


Fig 3.19 With the cursor hovering over a mid-tone in the image, the little circle shows where on the curve that mid-tone is located.

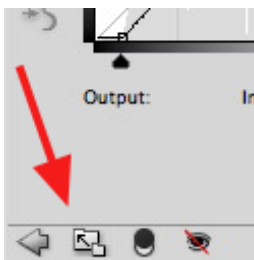


Fig 3.20 The curves expander button.

If you do want to select a point on the curve without having to use the mouse, CS4 has a brand new shortcut. Just use the "+" (plus) and "-" (minus) keys. (You don't need the shift key with these). To select the next point up (or initially the lowest point), use plus. To select the next lower point, use the minus key. (If this isn't working, try selecting the TAT). Once your point is selected, then use the arrow keys to move it in the desired direction.

The new curves adjustment is by default rather small, and they've included an "expander" button (Fig 3.20). Click it to make the curves a workable size! You'll find that in the smaller size curve, the arrow keys will move a point two units at a time. With the expanded curves, they will move one unit a time.

If you want to select more than one point at a time, first select one, and then use the mouse with the shift key to click on as many points as you want to add. (In selecting multiple points, the mouse will **not** cause accidental movements of the points). This can be very handy if you have the correct "S" shape, but want to move both points to the right to darken the image. Or, move both points to the left to lighten.

One final shortcut. When using the arrow keys to move these points, sometimes one unit at a time is just too fine. Hold down the shift key with the arrow key, and it will move ten units at a time—very useful! This is a universal modifier, and will work with any adjustment in Photoshop that uses the arrow keys.

## THE "S" CURVE

The "S" Curve? Aren't they required in all compositions at certain camera clubs...? Oops—this is a different "S" curve—the one you can do in a curves adjustment layer. They may be clichés, **but they really work!** This curve does not mess with the shadow or highlight endpoints, so it is fairly safe to use. It just puts a little more local contrast into the middle part of the tonal scale. And a little humble curve (like the one at the right) can make a mighty difference! Please look at image "3g\_SCurve.psd".

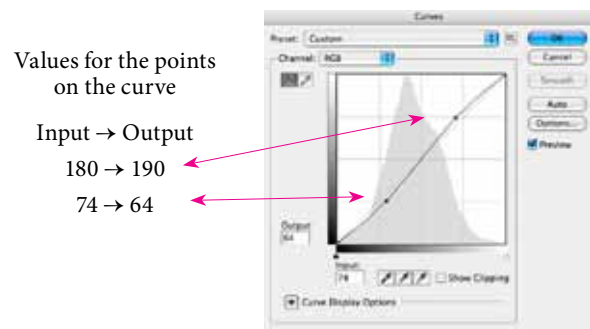


Fig. 3.53 An ordinary "S" curve



Fig. 3.54 No curve applied



Fig. 3.55 With S curve applied. Notice the contrast and saturation boost.

(As usual, the reproductions here will not do justice...) As you might notice, the curve above almost looks like a default curve. Small changes in curves can make big differences in the image. How do you "diagnose" a curve to see what it is actually doing? I use the shortcut for tabbing between the points on the curve (the plus and minus keys) and then just read the input and output values for each point. If you want to adjust one of these points you've just selected, please use the up, down, or sideways arrow keys on the keyboard. Each keystroke will move the point one unit in whatever direction you choose (if you're using the unexpanded, small version of the curve, it will move two units). **To do very fine corrections, you must know these shortcuts!**

To make the curve in Fig. 3.53 (at top of page), I put points around the  $\frac{1}{4}$  and  $\frac{3}{4}$  points on the curve grid, and then moved each point ten units in opposite directions to make the "S". With the new "TAT" (finger tool), you can also easily click in the image and drag up or down (while holding the mouse down) to place and adjust points. This makes it fun to create "S" curves!

To make the curve stronger, you can move either or both points further in their opposite directions (making a stronger S shape). If the darker tones in your image are getting too dark, you can make the "S" higher up—so it mainly affects the lighter tones, yet still gives a contrast boost (Fig. 3.56). With the "TAT" (finger tool) selected, just hover with the mouse in the image, and a little circle will appear on the curve, showing you where the tones are located on the curve. **This is another vital shortcut you must know!** By using this technique, you can see where the important tones are located on the curve, and then tailor the "S" so those tones are between the two points on the "S".

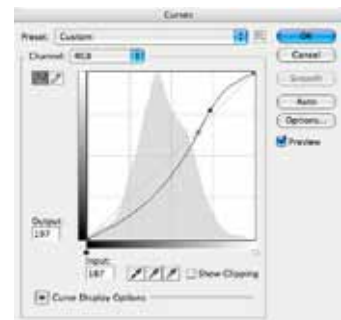


Fig. 3.56 An "S" curve targeting lighter tones

In Fig. 3.56 above, the S curve gives a nice effect, although the whole image becomes just a little dark. It would be nice to maintain this contrast, but lighten everything a little by moving both points of your "S" a few units to the left. You can select each point separately, and move each separately, but there's a better way. You can

actually select both points on the curve at the same time (or as many points as you want). You're probably aware that with most software, a common method to select more than one thing is to "shift" click on extra items. It's the same with curves. First select one of the points you want, and then hold the shift key down and select any other point(s) using the mouse. Once you have more than one selected, you can use the arrow keys to move them left for lightening, or to the right for darkening. In this example, I decided to move the points 5 units to the left. In Fig. 3.57, you can see the input box shows "-5". This means the curve has been moved to the left 5 units from its original starting point. This will lighten the image up slightly, while maintaining the S curve's contrast boost.

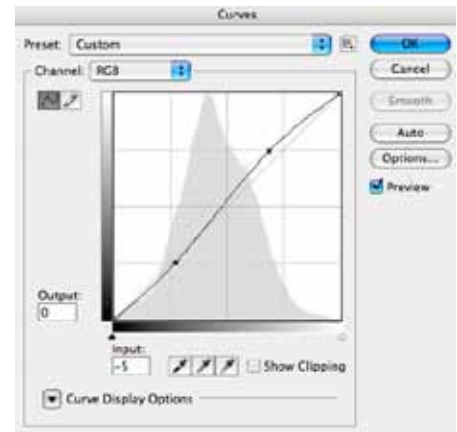


Fig. 3.57 I've moved both points 5 units to the left by "shift-clicking" to add the second point, and then using the arrow keys

Also notice in Fig. 3.55 that creating the "S" in the curve makes the curve steeper between the points, resulting in more contrast and *more saturation*. (Remember, making the curve steeper creates more saturation. Making it flatter creates less saturation). What if you like the contrast boost, but not the saturation boost? There is an easy way to separate the two. Just look in the layers palette near the top where you see "normal". Normal refers to the blending mode of that layer. Just click on the word normal and scroll to the very bottom of the list to choose "luminosity" (Fig. 3.58). Luminosity mode will limit the curve's effect to only the tonality of the image—colors will not be affected. Luminosity mode means "Don't mess with my colors!" Since each color channel in an RGB image contains both the tonality and color information, they are intertwined. Using luminosity mode will decouple them. I usually start with my curves in normal mode, and then after achieving the desired tonality change, I'll flip the mode from normal to luminosity to see which I prefer. Most of the time (with a contrast-increasing curve) I like the slight saturation boost I get. But be careful—with multiple S-curve layers, the saturation boosts can add up quickly.



Fig. 3.58 Changing the blend mode to luminosity

Until fairly recently, almost all photographs have originated with film. And film has a "characteristic curve" that slightly compresses shadows and highlights—and gives *extra separation* to the midtones. We've become accustomed to this rendering—and this is what the S curve simulates. If your image feels like it needs...um...a little "something", I would suggest adding an S curve. Almost all of my digital "master" files have one or more of these curves. Many times I will select a particular area in my image and create a separate S curve adjustment layer targeted just to that area. I could even generalize here and make a sweeping statement: Compression of tones is bad, separation of tones is good. And, before leaving this section, I should warn you about a particularly bad type of tonal compression—so bad that I call it "constipation". It's really rather easy to do, especially if you have lots of points on your curve. I usually caution people about "**pointitis**" (a condition where you've placed too many points on the curve). With this condition, trying to lower just one point on the curve will result in a flattish area—and flat curves will really squish the tones together, causing tonal constipation. The red arrow in Fig. 3.59 shows this innocuous-looking flat spot. If your image doesn't have any tones in this flat area, you'll be OK. But, I'm sorry to say, that's usually not the case. Don't stink up your image!

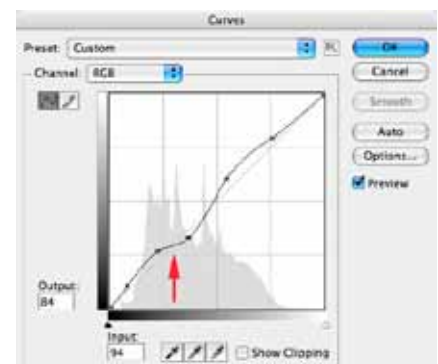


Fig. 3.59 It may look innocuous, but you *really* want to avoid any tonal constipation

## ADJUSTING GLOBAL COLOR BALANCE

Before you go tinkering with individual colors, it's best to first consider the color balance of the whole image. *When you correct the global color balance, many times the problems with the individual colors will also be fixed.* Notice I use the word *balance*. With digital RGB files, we have three color channels (Red, Green, and Blue). Our goal is to *balance* these three layers. If the Red is too strong, then the image looks reddish. How do you tell if your image is out of balance? If your image was solely of green grass, it would be hard to see a slight red **color cast** (cast means an overall bias towards one color). It would be much easier to see this cast in areas that should be **neutral** in color. (Neutral basically means—no color. In RGB parlance, that means that the three channels would have the same value ( $R = G = B$ )). Some examples of typically neutral areas would be: a white T-shirt, gray granite, concrete, a fluffy cloud, aspen trunks, etc. It is very easy to sense a color cast in these areas of what should be no color. It is very difficult to sense a cast in green grass! This fact was known even in the primitive era when we printed color in the darkroom. Many times we included a “gray card” in the image. The theory was that if you could get this gray card to print neutrally (with no color cast), then your color balance was correct (see sidebar).

Well, photographers are still including these gray cards, and color balancing is a snap in Photoshop. Let's start with a RAW image file, which will automatically open into Adobe's RAW converter, Adobe Camera RAW. Bring the cursor over to the third patch from the left, and Fig. 4.1's red arrow shows where you'll see the

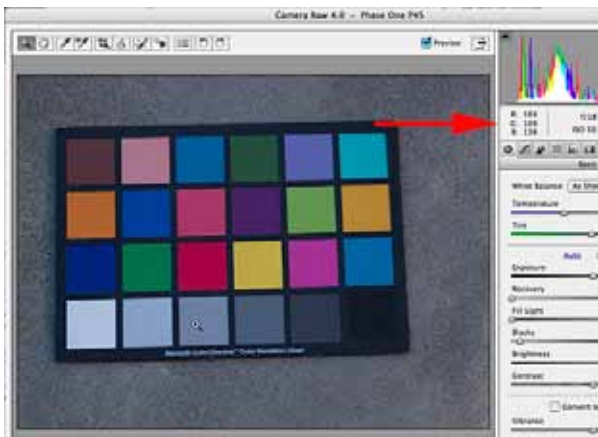


Fig. 4.1 a RAW image in Adobe Camera RAW

resulting RGB values. This lowest row of patches in the pictured

Macbeth Color Checker contains neutral tones from black to white. The RGB readouts tell us, though, that this patch is not currently neutral—it's bluish—103R, 109G, 138B. (Perhaps that's because I photographed this in shade—Duh!) You'll notice all the patches, plus the concrete behind the Color checker are bluish. There's a pervading bluish color cast polluting this image. All the colors are degraded with this excess blue, cloaking their individuality.

*Ah, I remember...*

In darkroom days of yore, we had color transparency film that had many separate emulsion layers for various colors. And we had color printing paper, that had various color layers. Due to manufacturing tolerances, and aging of the materials, these layers were never in “balance”. So we inserted colored filters in the enlarger to rebalance the color. If the print came out too red, we added cyan filters (the opposite of red), to reduce the red. Our goal was to balance the layers so that areas of neutrality printed neutral. Once that was accomplished, the colors were as good as they were going to get.

Nowadays, with digital, our goal is the same. The primary color correction is to **balance the strength of the three color channels**. And it's still helpful to include a gray card...

With RAW image files, it's absurdly easy to correct the global color balance. Just select the “white balance tool” (third icon from the left in the toolbar at the top) and click on this third square. You'll see it suddenly turn neutral—notice that the three numbers in the RGB readout are now identical (or close to it). Notice also that the other patches in the bottom row are now all very close to neutral. Also, the color patches are now shining forth with their greatest individuality—as the polluting blue cast has been neutralized. Clicking on different patches in the bottom row with the white balance tool will give subtle variations in resulting color balance. If you click on a colored patch, it will try its best to neutralize it, but it can't quite go that far.



If you are working with a digital camera, it is **very important** to do your color balancing when you develop the RAW files. With RAW files, the color balance, or more precisely “color temperature” is just a comment in the file. You are not degrading any of the image pixels in the file by changing this color temperature. RAW files are in a “linear with intensity, gamma 1.0” color space, and this allows the change in color temperature to affect basically all tones, from black to white. (You’ll shortly see that this is not the case once the file is developed into a tiff, JPEG, or Photoshop format file). For all these reasons, your best opportunity to get an excellent color balance is during the RAW development process.

In the jpeg version of this image, “colorchecker.jpg”, you’ll see that I have “developed” this RAW file. I did *not* correct the color balance—I developed the file at the default settings—so there is still a pervading bluish color cast. (You can download this JPEG file at the same place you obtained this pdf file). Let’s see how well we can correct the color balance now. You might think that the best way to color balance an image is with the “color balance” adjustment layer. But, that’s way too much work. No, in my opinion, the best tool is a curves adjustment layer! Besides, can’t we get an eyedropper thingy for one-click correction? Almost. The curves adjustment layer (and levels adjustment layer, too), contains three—count them—three droppers! This is because, in a gamma 2.2 color space (like Adobe RGB), or a gamma 1.8 space (ProPhoto), the correction you get from clicking on the gray patch with the gray dropper will peter out, and won’t fully correct the colors in the darks or highlights completely. That’s why there are three droppers, the black, gray and white droppers. I usually use either the white or gray droppers.

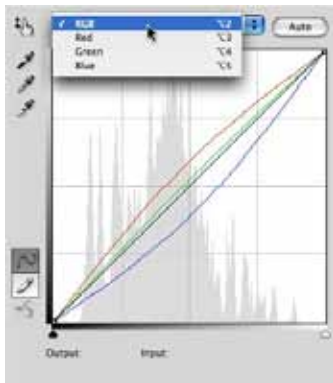


Fig. 4.2 Selecting which channel to display in the curve

#### THE GRAY DROPPER

Let’s try using the gray dropper to correct this image. Select this middle dropper by just clicking once on it. Now bring the mouse into the image and click on the same gray patch we used previously. Notice that the color balance is again greatly improved—but not as well as before. The gray patch we clicked on should be completely neutralized, but the correction is reduced as the tones get lighter or darker. Now looking at the curve dialog, you may not see any change to the curve after using the gray dropper, even though the image changed. The default curve we see is the “composite RGB” curve, but there’s also a separate curve for each color channel (Fig. 4.2). The gray dropper doesn’t change the composite, but works on

each of the three color channels, moving their midpoints around to neutralize the color we clicked on. You can see the composite RGB curve, plus the curves for the three color channels all at once (Fig. 4.3). (Make sure you have “channel overlays” checked in the “curve display options”).

Seeing this makes it obvious why the color correction mainly affects the midtones, and gets reduced as the tones get lighter or darker. The color curves bulge most in the middle, but then get closer to default as they head back to the shadow and highlight endpoints at the top and bottom.

The gray dropper is my favorite dropper! It’s the easiest and fastest to use. You don’t have to program it before use. You just click! This is due to the fact that the overall tonality doesn’t get appreciably lighter or darker. The midpoints of the color curves just move around changing the color, but not the tonality. Try clicking on various tones and colors with the gray dropper to see its effect.

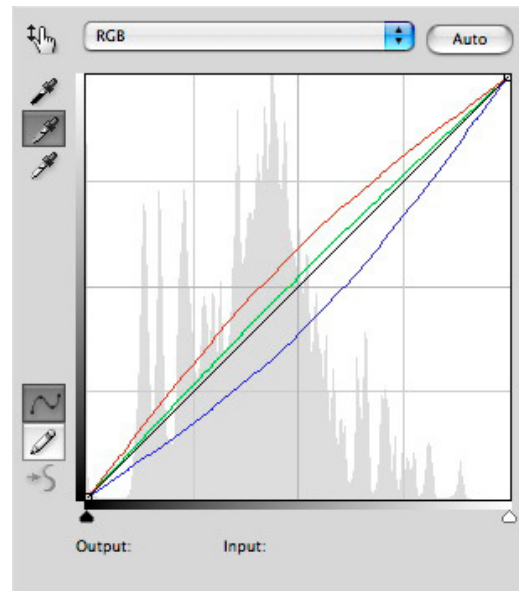


Fig. 4.3 “Channel overlays” showing. The composite and three color curves are all visible at the same time. The color correction is greatest in the midtones, and progressively reduced as the curves head back to their starting points.

## THE WHITE DROPPER

The white dropper (and black dropper, which I won't be covering) are trickier to use because they can substantially change the **tonality**—lighten or darken an image—along with changing the color balance. In fact, with the white dropper, you could simultaneously set the brightness of the highlights *and* their color! One adjustment layer could fix almost everything! But, I know you wouldn't even consider that, because it would violate the **Prime Directive**:

# VERILY, THOU SHALT KEEP TONALITY AND COLOR ADJUSTMENTS IN SEPARATE ADJUSTMENT LAYERS

And, why is this so important? Because, as you saw in the section on setting the highlight point, many times you'll want to paint areas out of the adjustment layer's layer mask. And if you've combined color and tonality together, you'll be painting out the color correction, too. Trust me on this, you want to keep them separate! So, when we use the white dropper, we need to make sure it doesn't do any lightening or darkening—it should just change the color balance.

Let's work again with the Color Checker image, “colorchecker.jpg”, and this time use the white dropper. And, obviously, the patch to use for the white dropper is the bottom left white patch. Before creating a new curves layer, let's examine the current color with the eyedropper tool (not the white dropper in the curves dialog—this is in the Photoshop toolbar). (The shortcut for selecting this tool is to hit the letter “i”). Check the tool options for the eyedropper to be sure it's set to “3x3” (so it averages 9 pixels). Bring it over this white patch and examine the info palette readouts.

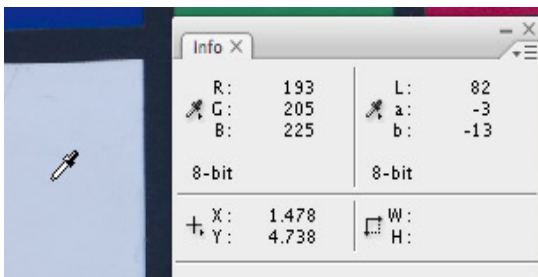


Fig. 4.5 The info palette displaying values of white patch

Notice (fig. 4.5) that the RGB numbers do not match. The blue number is higher, indicating an excess of blue. Also notice the readout in Lab mode. This shows a luminosity (L) of 82, which basically means this patch is 82% bright.

The part that makes using the white dropper tricky is that we have to “program” it first with our desired luminosity and color. We actually have to bring up the color picker to set this desired color. Then, we have to click in the image to tell Photoshop where we want to put this color we've just programmed. Here's how I work:

1. Determine the area you'll be using to set the “highlight color”.
2. Open a new curves layer, labelling it as “color”, or “highlight color”.

## LAB COLORSPACE

Lab is a special colorspace in that it completely separates out the luminosity or tonality information from the color information. All the tonalities are in the “L” channel, all the color in the “a” and “b” channels.

The L (luminosity) channel ranges from 0 (black) to 100 (white). The “a” channel is the green/magenta axis, and “b” is the blue/yellow axis.

**All you need to know is that a perfectly neutral color would show “0” in both “a” and “b” channels.** And the degree they diverge from zero is how colorful they are. In Fig. 4.5, we can see that the “a” number is close to zero, but the “b” is further. The minus numbers are cool, plus numbers are warm—this indicates a slight greenish/bluish tint, with the blue being stronger.

3. Double-click on the white dropper in the curves dialog—the lowest of the three droppers on the left side.

4. This opens the color picker. Bring the cursor into the image and it turns into a dropper—now **command** click on the white patch (Fig. 4.6). This loads the color you clicked on into the color picker. It can show the same color in four different color modes (HSB, RGB, LAB and CMYK). The easiest to use is the LAB. We now have the “L” value for our patch—L 82. We’ll leave that alone, but change the other two.

5. Change the “a” and “b” values in the color picker both to “0” (Fig. 4.7). This will give us a completely neutral color of our desired luminosity. You have now finished programming the color picker. Click “OK” to close the color picker. It will ask if you want to save this new target color as the default—click yes.

6. Now you need to tell Photoshop where to put this color you’ve just programmed. So you will click **again** in the white patch. You’re done!

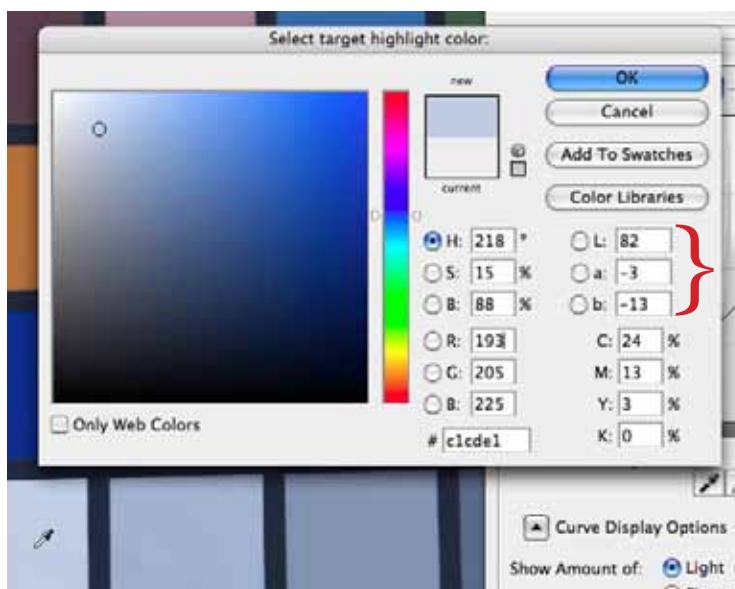


Fig. 4.6 Initial command-clicking on the white patch will display its current values (look at the Lab values).

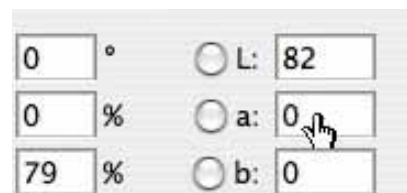


Fig. 4.7 Changing the “a” and “b” to zero

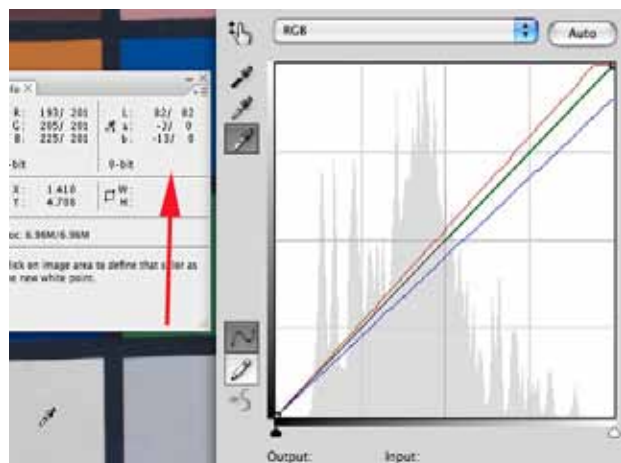


Fig. 4.8 The info palette shows the before/after values of the white patch

Now check the info palette (Fig. 4.8) to see the changes (you’ll see the before and after numbers, separated by a “/”). Notice that the L number has stayed the same, but the “a” and “b” have changed to zero—perfectly neutral. Also notice what has changed in the curve. The upper color endpoints of each channel have moved around such that our selected point comes out to neutral. This affects the upper tones primarily, and the effect is reduced as the curves head back to the origin point at the bottom.

I think people get confused with the white dropper because you have to click **twice**. The first time loads the current values into the color picker. You then modify it so it will be a neutral color, and close the picker. But then you have to click **again** to tell Photoshop where you want that target color to go.

This procedure IS confusing! Please repeat this example three or four times in a row until you understand the concept and the procedure. Do it now! Embrace the white dropper, and it will be your good friend...