

## CURVES: WORKING WITH MASKS

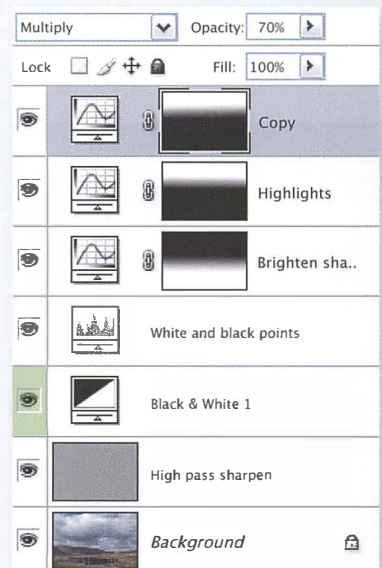
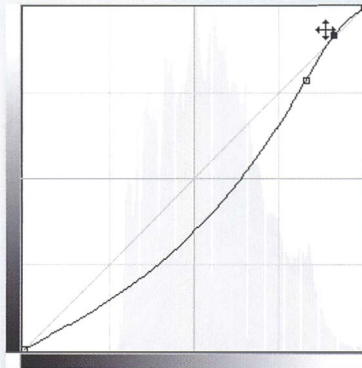


Left: Compared to the rest of the initial mono version, the sky here was relatively weak, but what was more important was that it contained valuable detail and a complete tonal range.

**1** Add extra Curves adjustment layers to control contrast, targeting each one on specific parts of the frame by painting onto the layer mask. The Gradient tool is useful for this, especially on landscapes with obvious horizons. Click and activate the mask, then draw the Gradient across the image in a long stroke to smooth the transition between adjusted and unadjusted areas.



**2** Subtle contrast differences, like dark and light cloud areas, are there to be exploited. Double-click the Curves adjustment layer, and, rather than guessing where their brightness values are on the curve, use the cursor and Ctrl/Cmd+click each side of the contrast edge. This samples the image and adds points to the curve, which you can then drag apart to increase the contrast between those tones.



**3** Use as many masked Curves adjustment layers as you want, using different gradients. Ctrl/Cmd+J duplicates an existing Curves adjustment layer, so you can quickly see the result of doubling the adjustment effect.

A good little trick is to switch the Curves adjustment layer blending mode to Multiply. This is like adding two adjustment layers at once and saves on disk space, and you can always use Undo or moderate the effect by reducing its opacity percentage.

# LOCAL CONTRAST

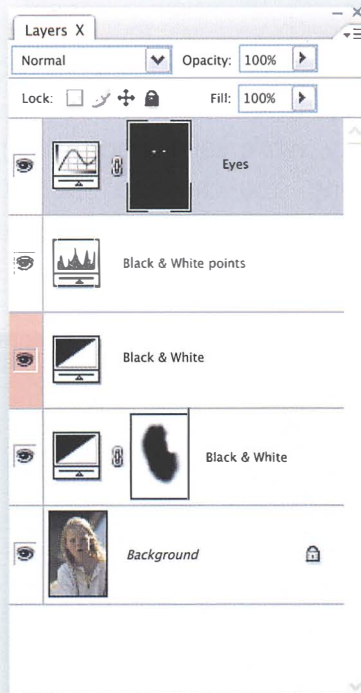
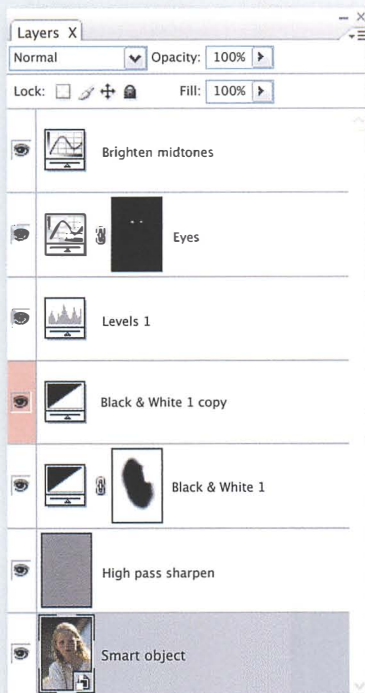
Contrast control usually applies to the whole image or to those areas deliberately chosen by the creative photographer. But a more surprising application is local contrast adjustment using a method borrowed from sharpening techniques, and which is sometimes known as wide area sharpening.

The idea is that you apply the Unsharp Mask filter but with settings very different from those needed for sharpening. This provides a contrast boost that is sensitive to the image's contents, and the local contrast increase is subtle enough not to completely distort the picture's overall appearance.

*Right and Below: Wide area sharpening gives the image a contrast boost without unbalancing the picture's overall contrast.*

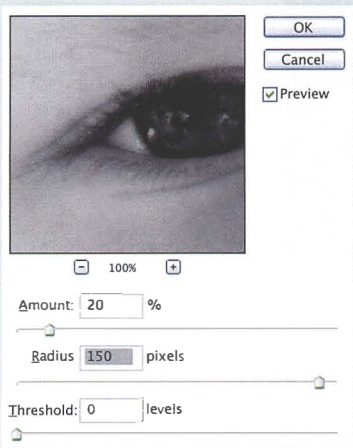


# WIDE AREA SHARPENING



**1** If you are using Photoshop CS3, wide area sharpening can take advantage of the new Smart Filter feature. Select the merged layer and choose **Convert to Smart Object** from the Layers palette, or pick the **Filter > Convert for Smart Filters** command. This changes the layer into a Smart Object so you can apply the Unsharp Mask or other filters and remove or adjust them later.

**2** If you are using an earlier version of Photoshop, wide area sharpening needs to be applied to an image pixel layer. Duplicate the background layer, or hold down the **Alt/C** key, and choose **Merge Visible**. This copies all your work into a single layer. You can always reduce the layer's opacity to moderate the effect.



**3** Apply **Filter > Sharpen > Unsharp Mask** and choose values such as 20% for the Amount and 150 for the Radius, but always leave Threshold at 0 so you don't get any artifacts. The required Amount and Radius vary; Amount is more like the contrast strength and 20% is about the maximum, while Radius is the affected area and is dependent on the picture's size and on the details which it will affect.

Wide area sharpening should produce a subtle effect, so it can be a good idea to zoom in or to work in full screen mode (F) and remove distractions such as the palettes (Tab).

# CREATIVE CLIPPING

Clipping the highlights or shadows is something you often avoid, but that doesn't necessarily make it wrong. Completely clipped or burnt-out highlights might convey an overwhelming sense of luminosity, while solid shadows can invoke emotions of gloom or make the subject look threatening. You can also use clipping to hide distractions and imperfections. For instance, high ISO images contain digital noise and the shadow areas may be darkened without unduly affecting the subject.

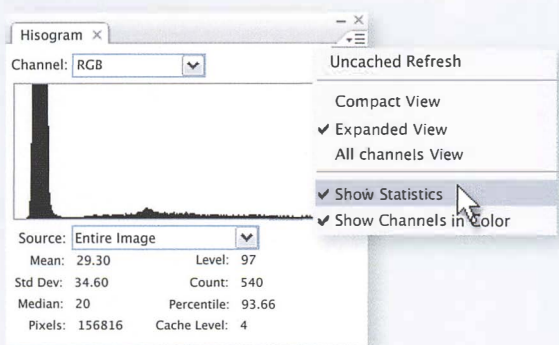


*Left: This image was shot with such strong natural sidelight that a little fill flash was added to balance the flowers' shadows. But the on-camera flash produced shadows of the stems on the background.*

# CLIPPING: USING CURVES



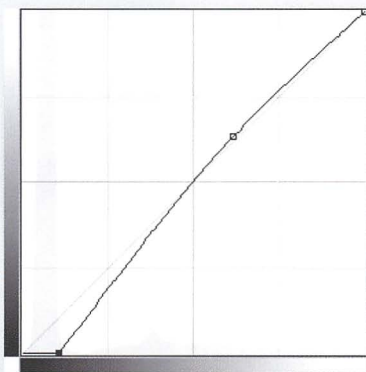
Above: Clipping the shadows realized this picture's original intention—complete highlight detail in the flowers and a pure black background.



**1** Even when you already have a Curves dialog box open, you can open up Photoshop's histogram and get statistical confirmation of what your eyes detect. Here there's a gap at the shadow end of the chart, indicating that there are no real blacks in the image.

R:	15/ 3	C:	73/ 75%
G:	15/ 3	M:	67/ 68%
B:	15/ 3	Y:	66/ 67%
		K:	82/ 90%
8-bit		8-bit	
X:	22.86	W:	
Y:	30.65	H:	
Doc: 57.4M/57.4M			
Click image to choose new color			

**2** The Info palette is almost as valuable. With the Curves dialog open, move the cursor over pixels in your image and the palette shows their Input and Output values in the RGB section. Here a tone with a brightness value of 15 will be output as 3.

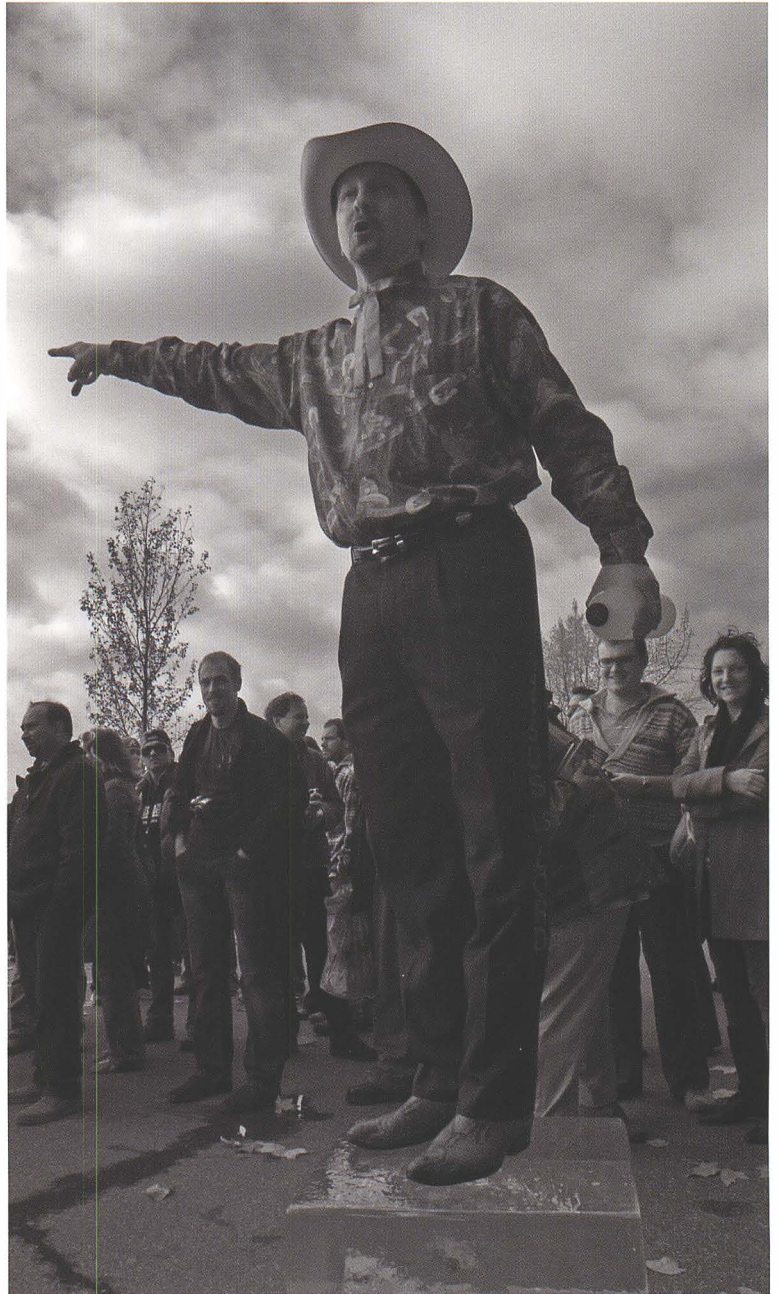


**3** To clip shadows aggressively, drag the curve's bottom left point to the right. Here the point has been moved to 27, and Output is shown as 0. This means that any pixels darker than a brightness value of 27 will be output as 0 or pure black.

# SHADOWS AND HIGHLIGHTS

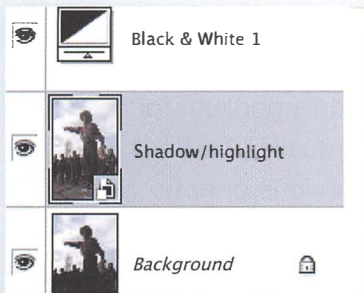
You can't always shoot an image in such a way that both the shadows and the highlights are captured properly. Sometimes you simply have to choose which is the more important; at other times the most important thing on your mind is to capture the fast-changing action. Bright backgrounds may cause the camera to set the exposure correctly for the background, underexposing the main subject and leaving it dark and unpromising. But when there is detail in the shadows, all is not lost.

There are now a few post processing techniques to deal with underexposed subjects. While you can always use masks and Curves adjustment layers, a group of more automated alternatives simulate the shadow-brightening effect of using fill flash at the time of shooting. A new approach is to use the RAW conversion step and Adobe Camera Raw's Fill Light slider. Another is Photoshop's Shadow/Highlights adjustment.

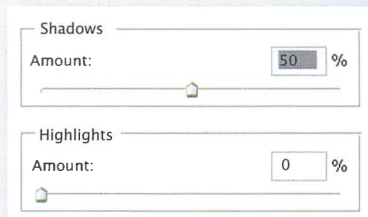


**Right:** Underexposing the subject often works out better than underexposing the background—the camera captures plenty of interesting detail in the background, and Photoshop's Shadow/Highlights adjustment can rescue the subject.

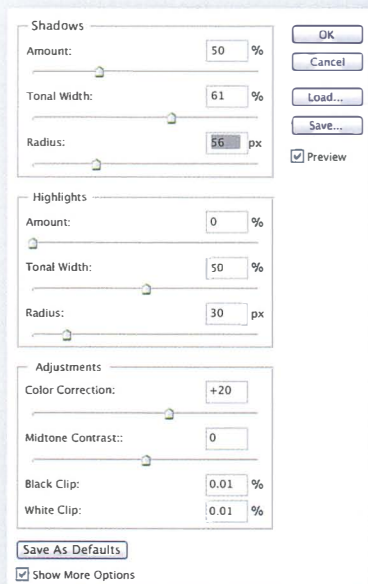
# SHADOW/HIGHLIGHTS: ALL THE OPTIONS



**1** The Shadow/Highlights adjustment changes pixel values, so always work on a copy of the image layer or convert it into a Smart Object using the command *Filter > Convert for Smart Filters*. As a Smart Object, the original pixel values are retained even when filters or Shadow/Highlight adjustments are applied, so you can always remove or fine-tune those adjustments later.



**2** *Image > Adjustments > Shadow/Highlights* is an "adaptive" adjustment and examines the image for ranges or areas of similar brightness. That's very different from Curves, for instance, which examines and changes each individual pixel separately. So here it will examine the image, find the larger areas of shadow and lift their values.



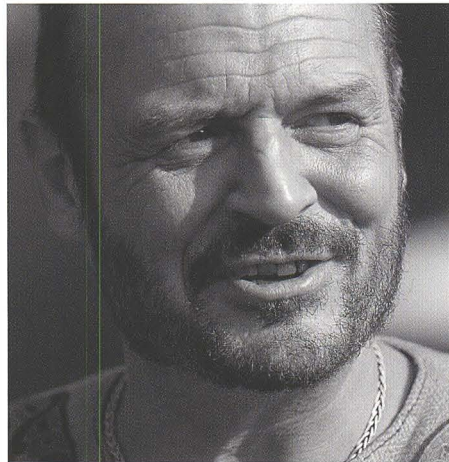
**3** Tick Show More Options in the Shadows/Highlight dialog box and you will have access to even more control over the way Photoshop treats the shadows and highlights.

*Left: When the scene is fast-developing, you don't always get the time to get the exposure spot on. Here the camera exposed for the bright sky and left the subject underexposed.*

# CONTACT STRIPS

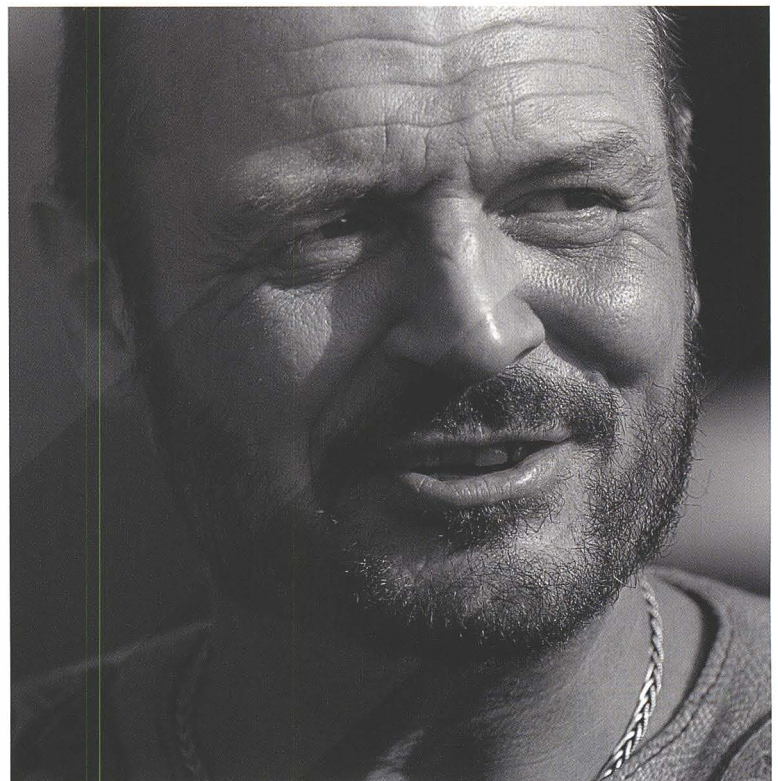
Darkroom workers calculate the correct brightness and contrast by making contact strips. You cover the photographic paper with a card and switch on the enlarger light for a second; move the card, then switch on the light again, and so on. Eventually you have a picture with a series of graduated strips, each a little darker than the previous one. By comparing the results, you can pick the “right” exposure for the final print. You also gain a good idea of how the picture will respond to alternative exposures, which makes any dodging and burning a much more conscious and creative process.

In the digital darkroom you can gain similar insights by varying an adjustment layer’s opacity, by duplicating it, or by switching the layer’s blending mode to Multiply or Screen. While these are all valuable, there are times when judging results side by side works better than changing slider values. And in any case you may just prefer to assess the image from contact strips on a test print and get better final results than examining the image on screen. This is a quick method that works not just with contrast and brightness, but with any adjustment layer technique.



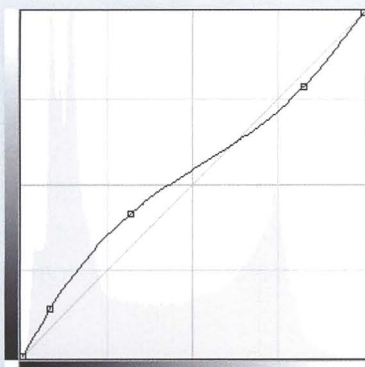
**Top Right:** *The original image. Portraits of men often look best with relatively high contrast, but it’s easy to go too far.*

**Right:** *The final image. The Gradient tool and the Posterize adjustment were used to create contact strips just like in the darkroom. Seeing the alternatives side by side, you can easily decide which contrast level best suits the subject.*

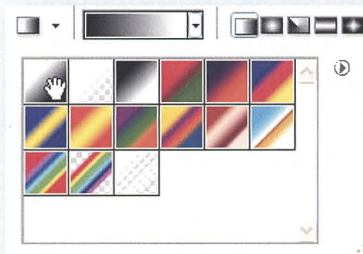




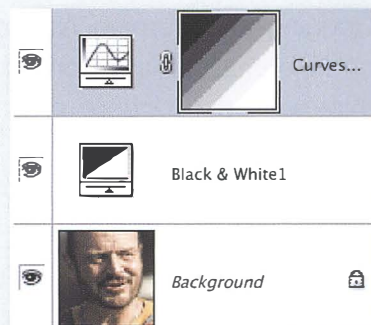
## LAYERS AND MASKS: MAKING CONTACT STRIPS



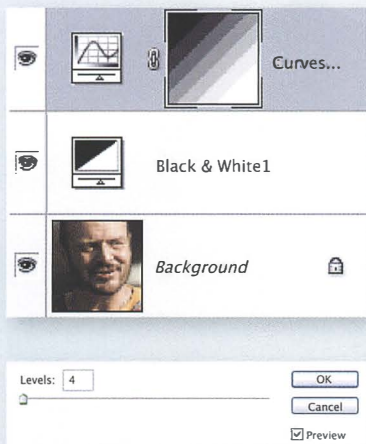
**1** Add an adjustment layer as normal. In this case I was interested in the effect of reducing image contrast, so the curve is shaped like a reversed S. This lifts the shadows and darkens the brighter tones.



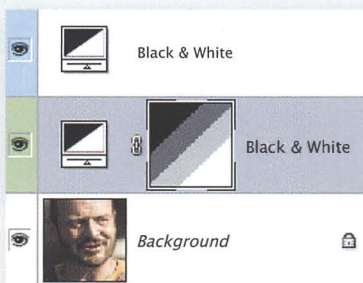
**2** Make sure the adjustment layer has a mask, and click to activate it. Then pick the Gradient tool (G) and choose a basic foreground to background preset.



**3** Paint across the mask in a direction that follows the image's important contents. Here any direction would work, but a left-to-right direction would work better for a landscape, ensuring each of the mask's tones includes sky and land.



**4** With the mask still activated, choose *Image > Adjustments > Posterize* and select a value between 4 and 10. This posterizes the mask into a series of strips. Examine the image, decide which treatment works best, and then remove the mask or press Undo to remove the posterization strips.



**5** The same technique can easily be used with other adjustment layers, such as during the black-and-white conversion stage. Here my initial thought had been to apply the Blue Filter preset, but I then experimented with Green instead.

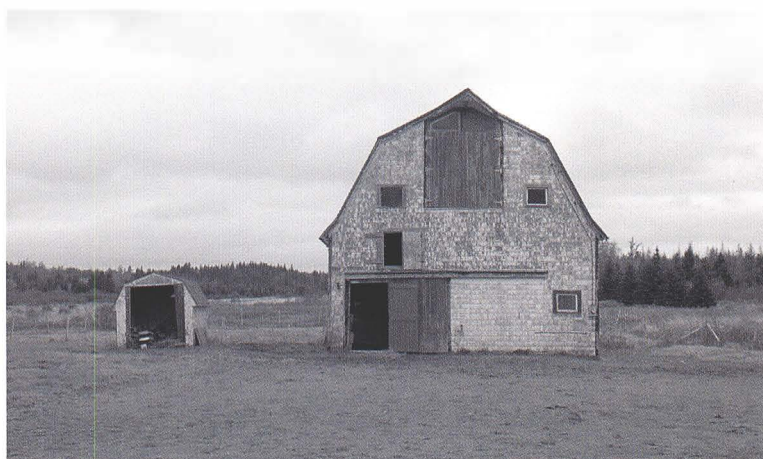
# DODGING AND BURNING : THE TOOLS

Dodging and burning has always been fundamental to the art of monochrome. Great photojournalists like Don McCullin or Sebastião Salgado had their negatives worked by experienced darkroom printers, and Ansel Adams was just one landscape master who loved to get his hands wet. Lightening or darkening parts of the picture can emphasize some features and subdue others, balance or wholly change the composition, or direct the viewer into and around the frame, all the while rendering an interpretation of the scene that remains believable.

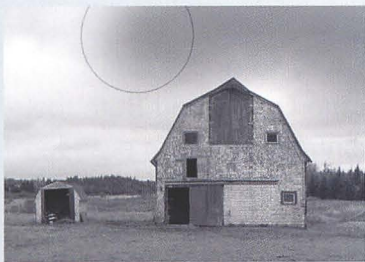
We'll look at the tools of the trade, first at older techniques such as the Dodge and Burn tools and Overlay layers, and then at the more flexible Curves adjustment layers and Masks. But it's one thing to know what the tools are, and quite another to wield them creatively. So the focus will switch firmly to the whys of dodging and burning and to the thought processes you might want to invoke with your own pictures. It's not going out on a limb to say that dodging and burning are the key to expressing yourself in black and white.

*Below: The original image. Do your black-and-white conversion first, then adjust the overall brightness and contrast before you dodge and burn.*

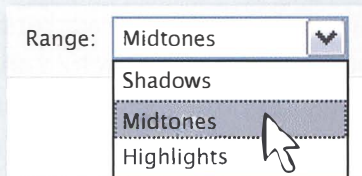
*Bottom: The final image. Overlay layers increase contrast and your painting should perhaps be more careful than mine—notice the rim of brightness around the roof.*



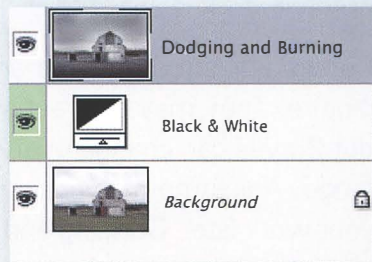
## STRAIGHT FROM THE DARKROOM



When new Photoshop users have darkroom experience, they immediately understand the Dodge and Burn tools (O) which in many ways mimic their darkroom counterparts. Select the appropriate tool and then just use it directly on the image.

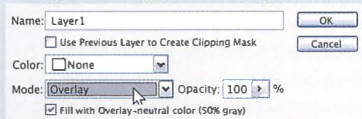


The Dodge and Burn tools work directly on a layer containing image pixels, something which feels very natural to darkroom enthusiasts. When you activate either tool, its options let you change the softness and size of the tool, rather like varying the tool's distance from the enlarger lens. It's a good idea to reduce the Opacity percentage and build up the effect gradually. You can also target certain tones, so for instance choose Highlights if you want to brighten the whites of the eyes without affecting the pupils.



Over time I've largely moved away from using the Dodge and Burn tools, perhaps just using them for whitening eyes and teeth. Because they change pixel values forever, they are "destructive," and you should always copy your image into another layer if you suspect you will want to fine-tune your work later.

## OVERLAY LAYERS

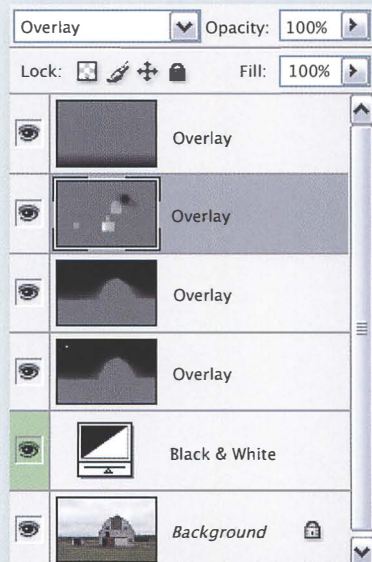


Another venerable dodging and burning technique is to paint on a new layer with its blending mode set to Overlay. As you click the Layers palette's Create a New Layer icon, hold down Alt/⌘, change the blending mode to Overlay, and tick Fill with Overlay-Neutral Color (50% Gray).

This Overlay layer is transparent at first, but you can paint it with the Brush, Gradient, or any other painting tool. This lightens the composite image when you paint with white or a gray lighter than 50% Gray, and darkens it if you use black or a tone darker than 50% Gray. Overlay layers allow much scope for

fine-tuning now or in a later Photoshop session. You can have as many layers as you need, so you might segregate different dodging and burning steps, boost the effect with the Ctrl/Cmd+J duplicate layer command, or cut it back by reducing their opacity percentage.

On the other hand, I've also tended to abandon using Overlay layers. Essentially I find Curves and Masks much more convenient. The Overlay blending mode increases contrast and you need to use more shades of gray, then paint around details with various brush sizes and softness. It takes time to produce subtle results.



# ADJUSTMENT LAYERS

Curves adjustment layers are the most powerful and flexible way to dodge and burn a picture. They may not feel as familiar to darkroom workers as the Dodge and Burn tools, but Curves can change every brightness level in a picture and control contrast in each tonal range. Adjustment layers don't change pixel values forever, so you can always fine-tune your work later. Dodging and burning is essentially local contrast and brightness control, so you use the same techniques to manipulate the curve.

Photoshop's masks are ideal for performing dodging and burning work, given the ease of painting different levels of gray, or even disabling the mask altogether. Just make sure you're working on the mask layer when you start painting.

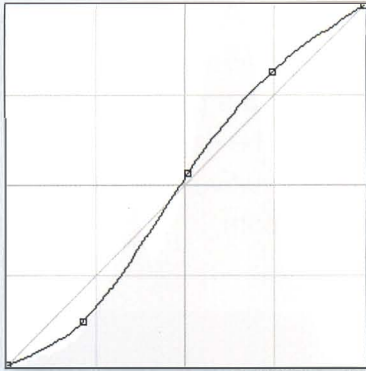


*Above: Using the Blue channel in Channel Mixer made the most of the limited color contrast between the wall and the exhibits in the original image.*

*Below: The final image. The more you get used to dodging and burning with Curves adjustment layers, the less you'll focus on the tools. Instead, the important part—how you want to interpret the picture—prevails.*



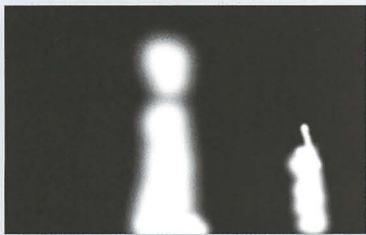
## TOOLS: DODGING AND BURNING



Above: Increase contrast by making an S curve with the curve's lower left dragged downward and its top left pulled upward.

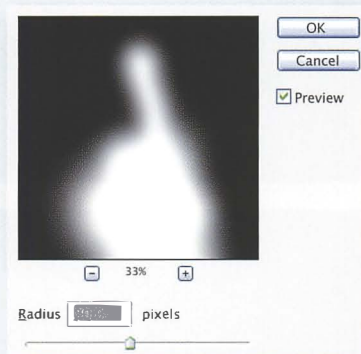
Dodging and burning with Curves is really about how you paint the adjustment layer's mask and control where the curve adjustment applies. It's a good idea to start by making a rough Lasso or Marquee selection of the area you want to dodge or burn. Then add the Curves adjustment layer by clicking the icon in the Layers palette. Your selection is immediately converted into a mask.

## TOOLS: GRADIENT

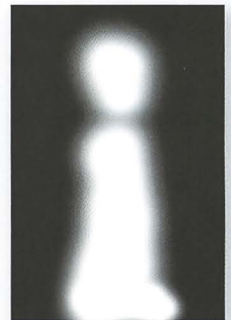


An alternative to the Brush is the Gradient (G) tool, which paints a smooth transition onto the mask. Vary its opacity and choose different presets as you need. Another handy control is the blending mode—set it to Darken or Lighten and you can apply multiple gradient fills to the same mask.

Just like working with regular image pixels, you can adjust the mask with filters such as Gaussian Blur. This can be useful if your masking wasn't smooth enough and your dodging or burning adjustment is too obvious. Make sure the mask is active, and then either blur the whole mask or make a selection and choose *Filter > Blur > Gaussian Blur*.

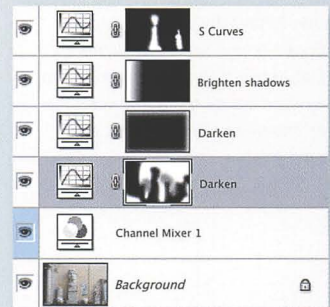


Equally, you can reshape the masked areas with *Edit > Transform*. This technique can be useful to stretch the mask and spread the Curves adjustment's effect over a wider area.



## TOOLS: THE BRUSH

The Brush (B) is one of the easiest ways to paint the mask. Use a soft-edged brush and vary its opacity; some people like to set it to under 50% and build up the mask. If you only want to dodge or burn small parts of the frame, it might make sense to fill the mask with black and then paint white over those areas. Conversely, if you want the Curves adjustment to affect most of the picture, leave the mask white and just paint black over those areas where it should not apply.



Above: Use as many masked adjustment layers as you need to do your dodging and burning work, and use tools like the Brush and the Gradient to paint the masks.

# DODGING AND BURNING: LANDSCAPES

Part of the art of black and white has always been dodging or lightening some areas of a picture, and burning in or darkening others. At the risk of exaggerating a point, it's worth repeating Ansel Adams's analogy of the print as the performance of the negative's score. Your work can be planned very deliberately, or it can result from intuitive trial and error which can perhaps be rationalized after the event. Usually it's a bit of both.

*Right: To preserve the mistiness of this London scene, I used the Blue Filter preset in the Black and White adjustment layer—exactly how I would have worked with mono film.*

*Below: Lifting the highlights and midtones brings more life to the picture, while diagonally masking the lower third draws the eye across the River Thames to Big Ben and away into the mist.*



## THE THOUGHT PROCESS

By the time I had reached central London to take this shot, the sun was cutting through the morning fog, so to retain the sky's highlight details I underexposed the photograph by 2 stops and left the shadows to look after themselves. The result is that, while the sky contains plenty of interest, the lower third of the frame is dominated by darker tones which make the straight picture feel very bottom heavy. So I needed to lift contrast in the shadow tones and reveal more detail in the lower part of the picture.

I also felt that the straight print lacked compositional direction as well as shadow contrast. At first glance, the picture seems to comprise a heavy lower third of the frame, and the big wheel on the left. My eye then wanders straight up into the sky and away. Most of all, the picture fails to emphasize an important narrative element—it's not just a big wheel, it's that one opposite Big Ben. Darkening the sky, like shooting with a neutral grad, would

top the frame. And keeping the bottom right could lead the eye diagonally from the bottom left, past the wheel, and then across the river to the Houses of Parliament and into the distance.

*Highlights must not change*

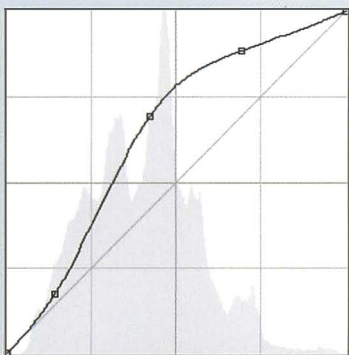
*Keep strong*



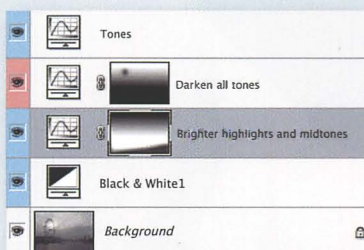
*Lead eye into the distance and over to Parliament*

*Lift shadows*

## THE INTERPRETATION



Most of the work is done with the Curves adjustment layer "Brighter highlights and midtones," which dodges the middle area, lifting the highlights and the midtones. Notice the point to its lower left; I also experimented with a contrast-increasing S curve but ended up with one that simply anchored the strength of the darkest shadows.

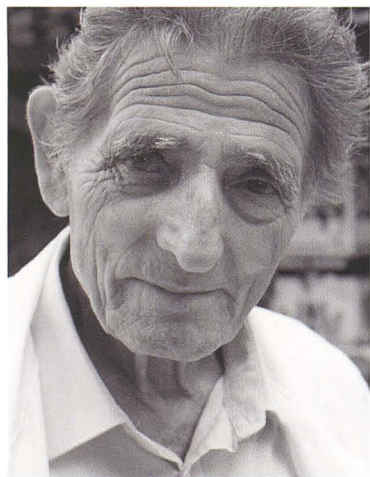


The curve's most important aspect is the masking. To protect the lower right and sky, the Gradient tool (G) was much faster than painting black with a brush. Notice how three white to black gradients have been applied: one directly upward, one diagonally to the lower right, and a small one at the bottom left that seals that corner. To paint multiple times with the Gradient filter, change its blending mode in the toolbar to either Lighten or Darken. Setting it to Darken means that it only paints where it will darken the mask.

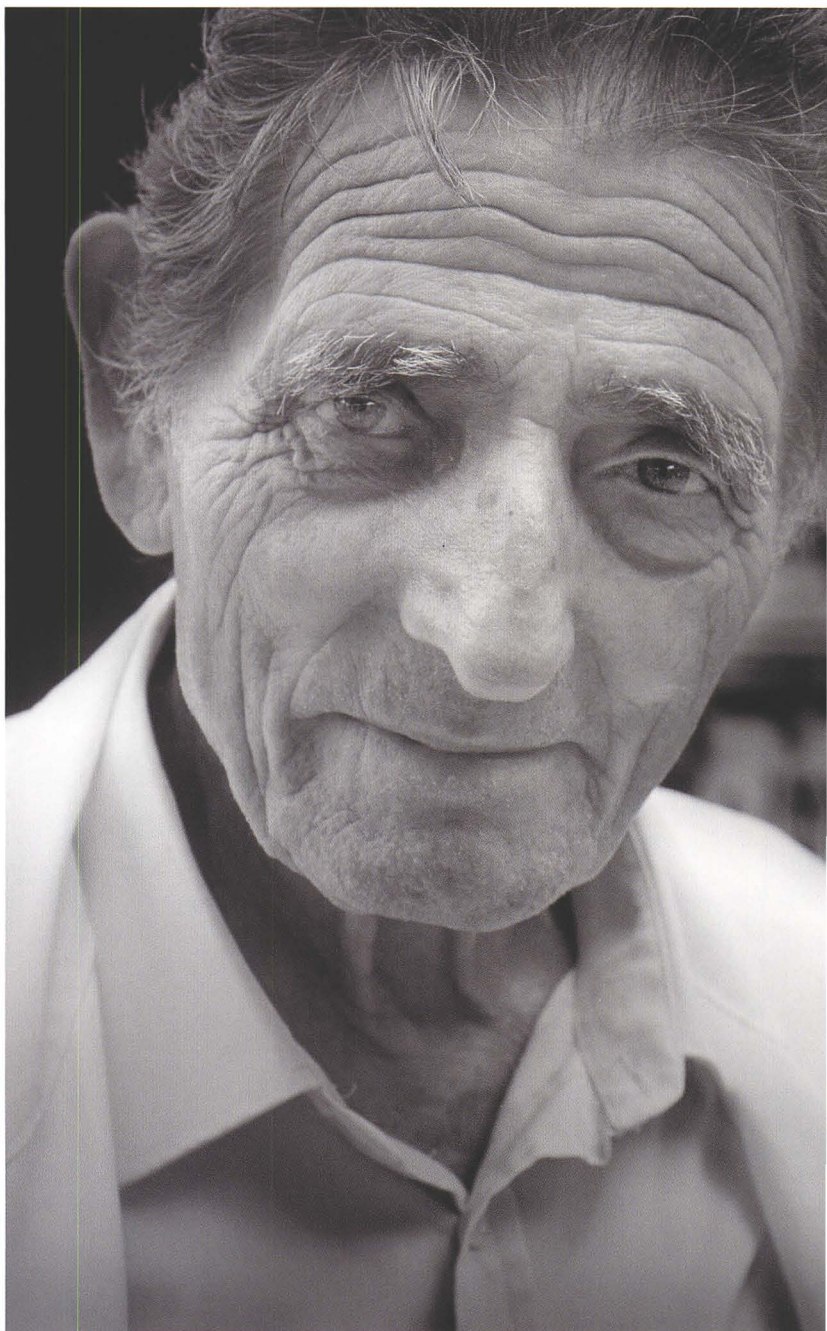
The finishing touches were to add two Curves adjustment layers. One was needed to burn in the sky and so was limited to the top of the frame by painting the mask with the Gradient tool. As often with landscapes, I started the gradient just below from the horizon, but then protected the sun with a soft black circle. The second layer added the cold blue tone—as usual, setting the adjustment layer's blending mode to Color so it didn't change the brightness and contrast.

# DODGING AND BURNING: PORTRAITS

Dodging or burning small features can make a big difference to the final image and can often give portraits that crucial finishing touch. Gently burning in the sides of the face can emphasize bone structure and, perhaps rather like applying makeup, can make the person look slimmer. Meanwhile, toning down a man's receding hairline is another common request. Dodging is every bit as useful, whitening teeth or drawing attention to the eyes while still retaining the photograph's convincingly natural appearance.



*Above: The original image. The Black and White adjustment layer's Red slider was dragged to the right to soften the man's rugged skin tones, but the plain mono rendition doesn't draw enough attention to a face that really is full of character.*



*Right: Dodging the man's eyes and burning in the coat makes the final image a much truer portrait.*



## THE THOUGHT PROCESS

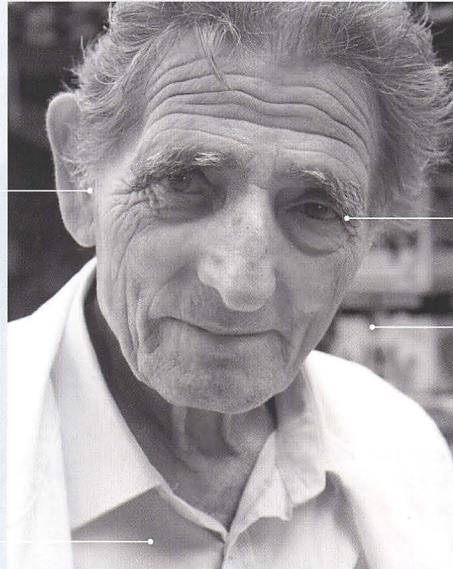
From the initial image, it's clear the man is working in a shop or pharmacy or some other environment where a certain amount of cleanliness is required. In fact it was in a food market. While his white coat helps you determine the picture's context, its brightness seems to overwhelm the portrait. First, it tends to pull the eye away from the man's face, the character of which is by far the most interesting part of the shot. Second, the white coat and the shirt's open collar direct the eye downward and unbalance the image, making it top heavy. This image needs the coat to be burnt right down, and the background needs to be toned down at the same time.

With portraits, it's always a good idea to check the eyes. They're usually the picture's most important feature, the first thing the viewer examines, so you would probably have checked their sharpness before you decided to make a black-and-white print. Here, in planning my dodging and burning, what seems important is the eyes' brightness relative to the rest of the picture—the

whites are not different enough in tone from the rest of the face. Just like in the traditional black-and-white darkroom, a little careful dodging can work wonders.

*Ear and side of face too light*

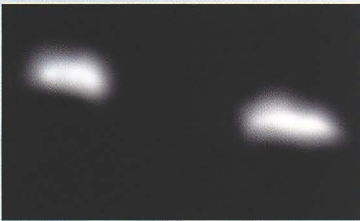
*Shirt and coat very bright; they need to be toned down*



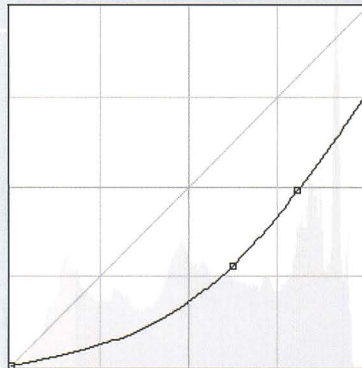
*Both eyes too dark*

*Background cluttered and distracting*

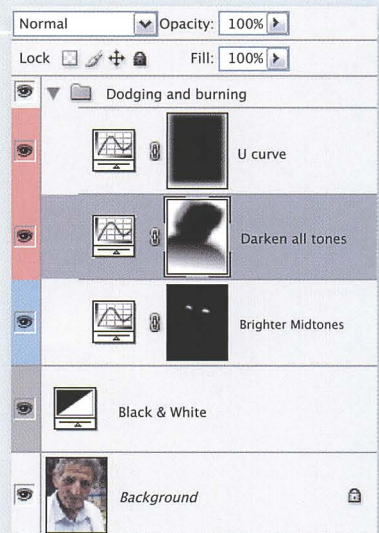
## THE INTERPRETATION



If you're using masks to localize your adjustment work, the order in which you dodge and burn is usually up to you. So I started work by dodging the eyes with a Curves adjustment layer. Dragging the curve upward, roughly at first, I then filled the layer mask with black before using a small, soft-edged brush to paint back the shape of the eyes. Now that any further work wouldn't affect the rest of the picture, or distract me, I changed the curve a couple of times, all the time watching the effect on the image. Don't try to get it right first time—the beauty of the adjustment layer is that you can go back and fine-tune the curve or the mask. In this case I dragged it up a little more until the eyes were nice and bright.



Toning down the coat's pure white was the key to what I wanted from this picture: a portrait rather than a snap of a man in a white coat. So I burnt the coat in with a particular type of Curves adjustment layer. To render whites as midtones, you drag the curve's top right point directly downward. It's a distinctive curve and, as it ruins true whites elsewhere in the image, not one I ever use without painting the mask. Here, I used the Gradient tool to paint the effect in from the bottom of the page, and then burnt in the background by painting white with a soft brush around the man's head. Not all parts of



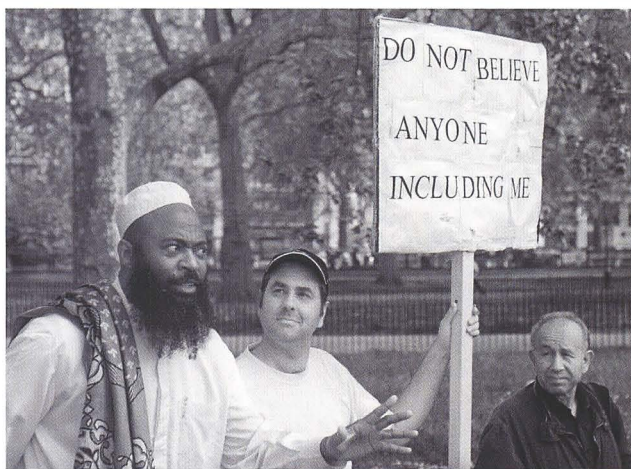
Above: Grouping the dodging and burning layers makes it easier to adjust their opacity together and reduce their effect.

a picture need the same amount of darkening, so notice the mask's upper left has a gray area painted with the brush opacity set to 50%.

# DODGING AND BURNING: REPORTAGE

Dodging and burning isn't always about grand changes of emphasis. While a finished landscape photograph might contain an element of performance, there are other times when the photograph would simply be devalued if the viewer felt it had been manipulated in any way. Let's look, for example, at a such a photograph, in this case a reportage shot from Speakers' Corner in London's Hyde Park.

*Right and Below: The basic black-and-white conversion was done with a single Black and White adjustment layer. The Greens slider was dragged to the left, rendering the grass and leaves much darker than in the original image and emphasizing the picture's subjects.*



## THE THOUGHT PROCESS

As always, step back for a moment to consider how you want to interpret your image. Decide what's important, what isn't, and identify anything distracting.

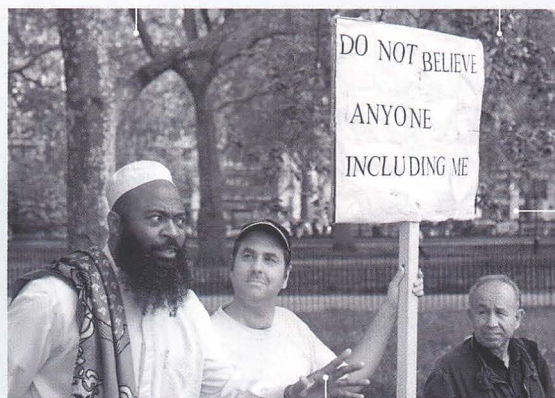
This picture is clearly about the preacher, his hand gesture, the two listeners, and the placard. They tell the viewer what is depicted, but as well as a simple documentary purpose they also help the viewer navigate the frame. Working from left to right, my eyes go straight to the preacher, then follow the line of faces and loop up to the placard; or alternatively, they follow his hand and the listener's arm up to the placard, and then see the third man. These key features really need to stand out.

The rest of the scene, already thrown out of focus by an *f*4 aperture, is almost completely irrelevant. But some buildings do seem too obvious in the background, and some contain the highlight tones close to the placard that draw your attention away from it. As well as subduing the background, these highlights need to be toned down.

It's an identical thought process whether you're working in the darkroom or with Photoshop. You have to judge each picture on its merits. Overall, I feel a more subdued background that

obscures the buildings will make the subjects sufficiently prominent and also suit the composition. It's a highly subjective decision.

*Background needs to be darkened to help the faces and banner stand out*

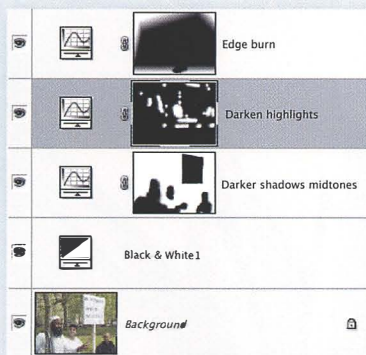


*Left: Heavy manipulation of this image would detract from its journalistic character, but subtle changes can enhance the subject and composition*

*Distracting highlights*

*Hand needs to be emphasized, so darken the tones around it*

## THE SOLUTION

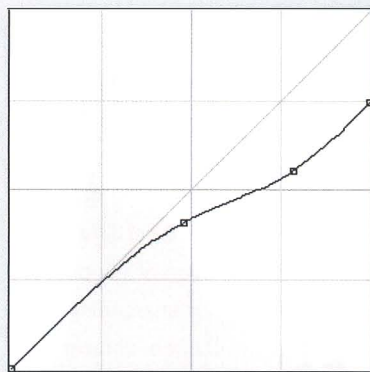


The dodging and burning is done with a group of three Curves adjustment layers. Don't be afraid to use as many as you need. Each layer's mask was painted with a soft-edged brush. Where the mask is white, the adjustment affects the image. Where it's black, the image is unchanged by the adjustment.

The Darken Shadows Midtones layer (also the Edge Burn layer), is a conventional U-shaped curve. Notice how I've painted on the mask so the faces and the placard are unaffected.

The Darken Highlights adjustment layer is the most interesting and deals with the problem buildings and other distractions. Dragging down the curve's white point, the top right corner, made Photoshop darken the brightest tones until they were no longer noticeable. To avoid darkening the shadow tones as well, I added extra points on the curve and dragged them upward, helping my work blend in. Following that I painted on the mask, targeting just the buildings, paths, and one or two other highlights.

Burning in the background makes the faces and placard stand out, but maintains the picture's realism. In cases like this it's important to maintain the photo's documentary character.

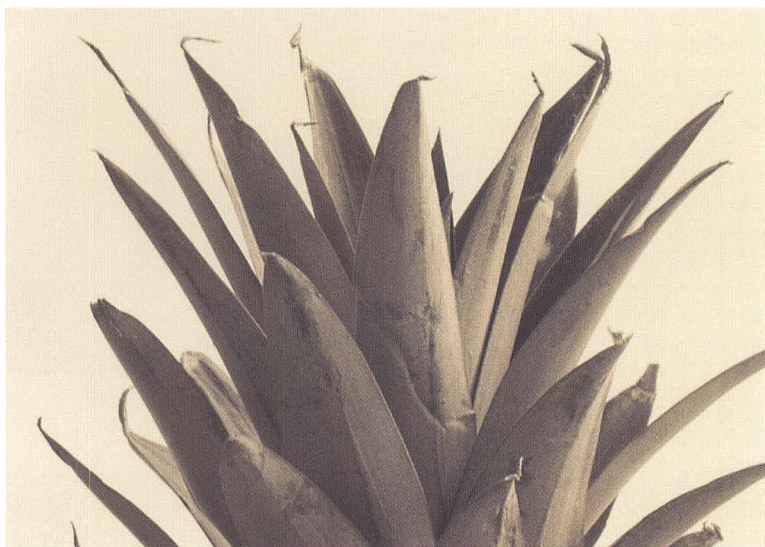


# GENERAL SHARPENING

Digital images consist of a grid of usually square pixels and that makes them inherently soft. When the camera stores the picture as a JPEG, it applies certain sharpening settings, but RAW captures are just the raw and unsharp data and so they need sharpening at some stage. This sharpening is an increase in contrast between neighboring tonal areas, the edge's darker side being darkened and its lighter side being lightened, and it's an optical trick that makes the picture appear sharper and more focussed.

Sharpening is a "destructive" process, changing pixel brightness values, so it generally needs to be done late in the editing process—though Bruce Fraser convincingly distinguished between three sharpening phases. First, a little "capture" sharpening may be applied at the start of the editing process—using default values from Adobe Camera Raw, for example. Then there is an optional "creative" phase where you select features like the eyes and sharpen them. Finally, you always need to apply "output" sharpening to the final image that the viewer will examine.

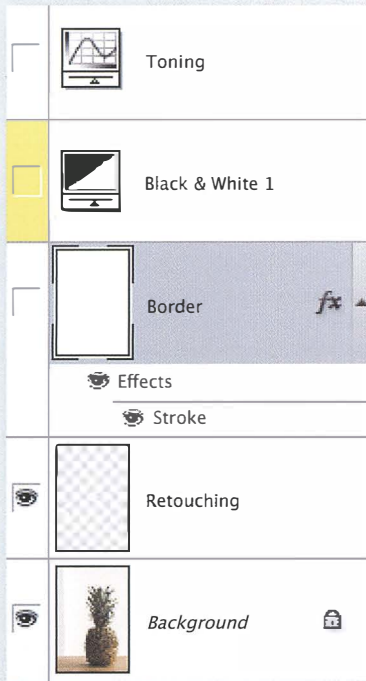
Output sharpening is usually the most important and you need to relate its amount or strength to the final image's physical dimensions and to the resolution of the output device. Whichever sharpening technique you choose, different settings apply to 300 ppi inkjet prints and 1000 by 600 pixel web site JPEGs. The goal is to apply as much sharpening as you can without it being identifiable in the final output. To do this well, you need to understand the basic techniques, how to apply them selectively, and how to make it easy to fine-tune the effect after you examine the final output.



*Top: The original image, like all digital images, is initially soft and needs some form of sharpening. The camera does that for you when it is set to save your pictures as JPEGs, but RAW captures require sharpening in post processing.*

*Above: The sharpened image. Sharpening's effect needs to be judged at the final output resolution. On-screen views can be misleading. For web output, it matters little as the pixel is the final unit, but the final print is likely to be at 300 ppi so needs to be examined carefully.*

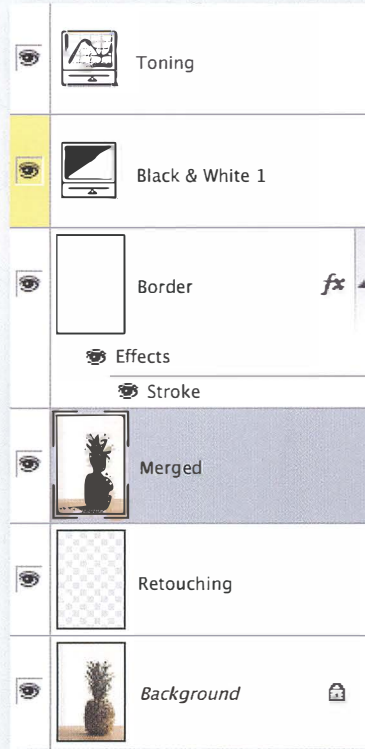
# UNSHARP MASK



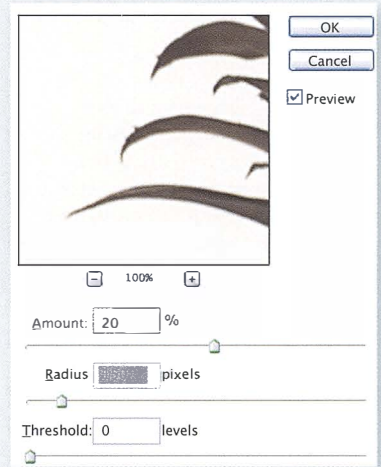
**1** Sharpening is inherently destructive and is best done on a copy of the image layer as one of the final steps before printing. This keeps your options open if you want to alter or fine tune your work later.

At that point, there may well be a number of layers— separate ones for retouching, black-and-white conversion, and contrast control, for instance. Before you make a merged layer, hide any layers which might affect the sharpening or which might restrict you.

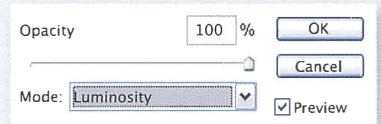
In this case, some marks on the wall needed cloning away and this work was done on its own layer—which needed sharpening like any other image pixels. Another layer contains a 10-pixel border which would show as a nasty sharpening halo, so that layer has been temporarily hidden. The other layers are hidden because I prefer to sharpen an unadjusted color image—to avoid repeating my sharpening work if I ever produce a color version of the picture.



**2** Once you have checked the correct layers are visible, hold down the Alt/⌘ key and choose Merge Visible from the Layers palette menu, and make the other layers visible again. Of course, should you decide to do any further retouching after sharpening, you would have to repeat these steps.



**3** *Filter > Sharpen > Unsharp Mask* is a well-established sharpening tool and produces great results. For general sharpening for print, choose an Amount between 100 and 200, a Radius of 1–3, and a low Threshold value.



**4** Immediately after applying Unsharp Mask to color pixels, choose the command *Edit > Fade Unsharp Mask*, or use the keyboard shortcut Shift+Ctrl/⌘+F. Set the blending mode to Luminosity, and click OK. This quick step makes Photoshop apply the sharpening to the picture's brightness values and not to the color values, and so eliminates the chance of color artifacts becoming visible.

# HIGH PASS AND SMART SHARPENING

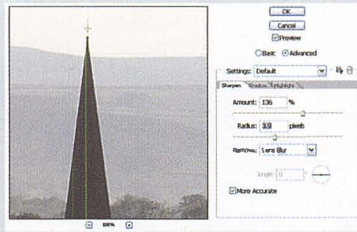
Building on the “traditional” Unsharp Mask method are a number of newer, and frequently more effective, sharpening methods. Which one you use is, of course, a matter of personal preference, but don’t discount them—especially Smart Sharpen—because they’re not the most commonly used. A lot of people are just using old books.

## SMART SHARPENING

Smart Sharpen is the newest of the main sharpening techniques and combines sharpening and artifact protection in the same dialog box.

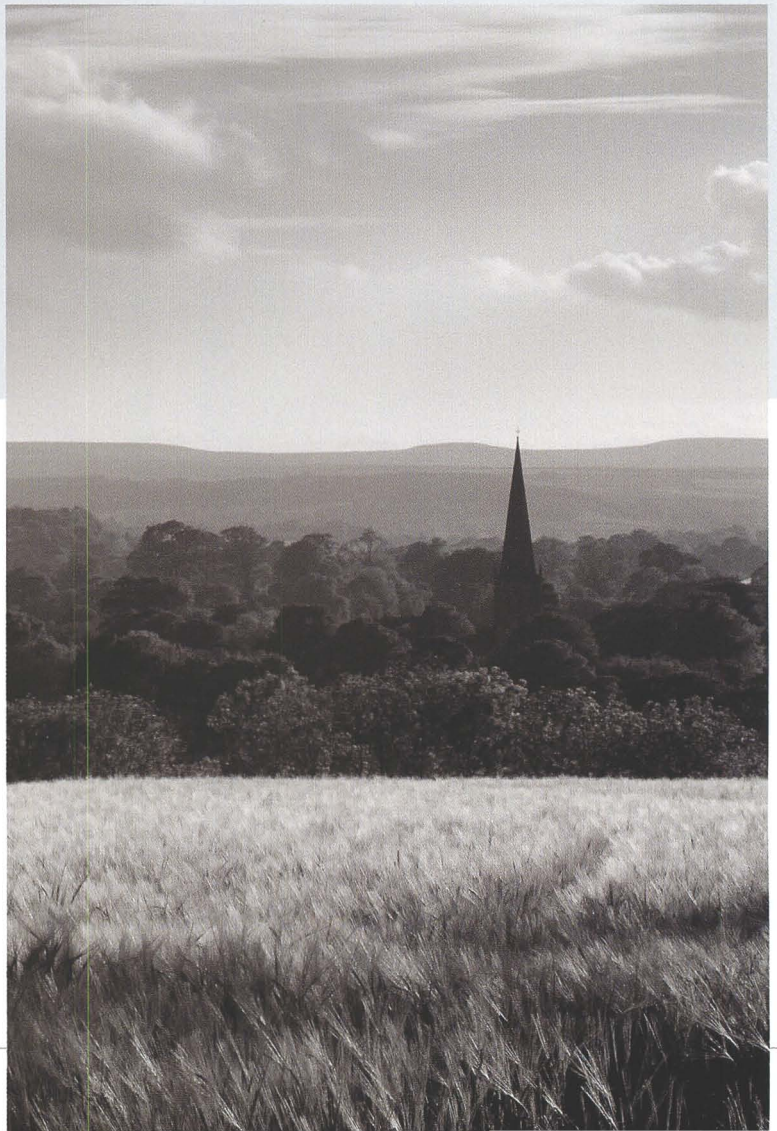
On the Sharpen tab, Amount and Radius have similar functions to their namesakes in Unsharp Mask. More interesting is the Remove drop-down box which gives you the choice of counteracting different types of image softness. Gaussian produces results similar to Unsharp Mask, and Motion is geared to motion blur, but the best choice is Lens, which is designed for optical blur.

Choose the Advanced options so you have separate control of sharpening in the highlight and shadow areas. Work first on highlight sharpening, as the brighter details tend to be more obvious than those in the shadows. The key control here is Fade, which is your safeguard against artifacts.



Left: As well as sharpening the church steeple, look out for artifacts such as the mottling in the background. These excessively high Radius and Amount settings have quickly degraded the image.

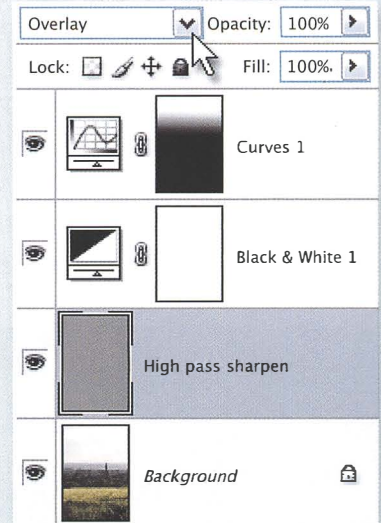
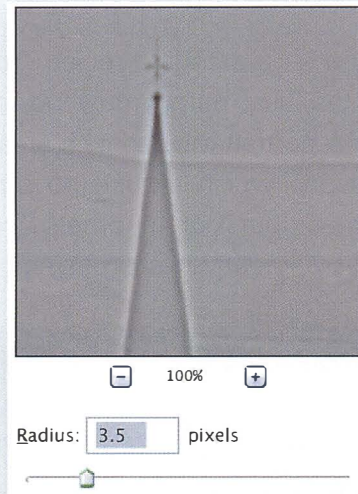
Right: The key to sharpening is to apply as much as you can without anyone noticing. Unsharp Mask, High Pass, or the newer Smart Sharpen can all produce great results. But always examine the final print and don’t rely on your monitor.



## THE HIGH PASS METHOD

The third main sharpening method is High Pass. First, it's very important to set the merged layers' blending mode to one of the contrast-increasing modes: Overlay, Soft Light, or Hard Light. Then choose *Filter > Other > High Pass*.

High Pass's only control is the Radius slider, but it produces good, rather aggressive sharpening that is ideal for printing.

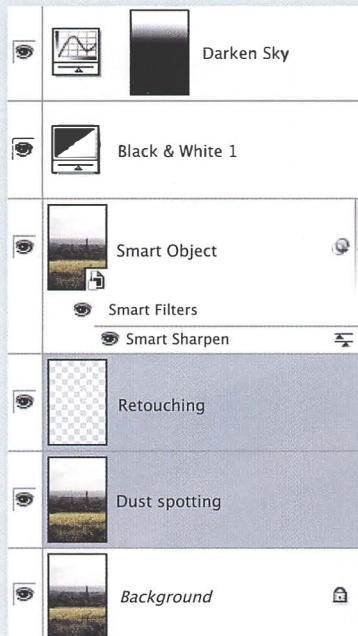


## SMART OBJECTS

Sharpening needs to be judged by examining the final output, the print or web output. You may not always get it right first time, so it makes sense to keep your options open. Photoshop's Undo function and the History palette are useful enough, but Photoshop CS3's Smart Objects feature is a big timesaver when redoing sharpening would mean hiding and merging a number of layers. It is ideally suited to fine-tuning your work and works with any of these sharpening techniques.

To convert the merged layer into a Smart Object, either choose Convert to Smart Object from the Layers palette's menu, or use the menu command *Filter > Convert for Smart Filters*.

Then apply any of the sharpening filters. If you subsequently change your mind about the effect, just double-click the filter layer in the Layers palette and you can change the sharpening settings.



Above: The Smart Object layer is a merged duplicate of the layers beneath it, so it's always possible to return to the image and make adjustments without having to re-do your sharpening.

# SELECTIVE SHARPENING

Sharpening should never be seen as a standard recipe. You need to examine the inkjet print, web JPEG, or whatever the final output may be, and individual pictures require different degrees of sharpening. A portrait may contain areas of gentle skin tone or a blue sky may contain smooth gradations which require no sharpening. Other pictures may require sharpening in some areas, but not in others, something only the artist can determine. This is what is meant by “creative” sharpening.



*Above: In the original image a long depth of field has rendered everything broadly in focus.*



*Right: In the final image, the cemetery's background was left soft and unsharpened, as were the less distracting twigs and branches on either side of the monuments.*



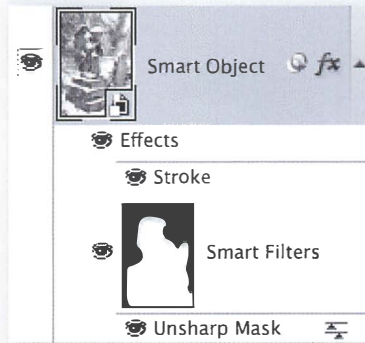
## MASKED SHARPENING



*Left: Creative sharpening is all about considering each image on its own merits. This cemetery's background contains lots of small branches, but finely rendering their detail is not necessary. If they were sharpened, they would become more obvious and a distraction.*



**1** Instead of applying sharpening to the whole merged layer, you can use the selection tools to identify just those areas which need it. So the sharpening isn't too obvious, the selection's edges need to be softened or "feathered" using **Alt/⌘+Ctrl/C+D**. Or, as shown here, you could paint a selection in Quick Mask mode, blur its edges, and then apply your sharpening to the target area.



**2** Layers and masks offer more versatile control. You can target sharpening on certain features, protect other parts of the image, and fine-tune the settings in later Photoshop sessions. This works the same way as with selective black-and-white conversion or dodging and burning, so let's examine a more modern approach using a couple of the latest Photoshop CS3 features.

There are a few tricks going on in this Layers palette. Most of all, the image isn't on a Background layer but is a Smart Object—notice the icon in the thumbnail. The original RAW file was opened via Adobe Camera Raw 4, and I applied the grayscale conversion there.

But more importantly I held down the Shift key at the same time as clicking the Open button. This makes Photoshop "place" the picture as a Smart Object, and has a couple of uses. First, the RAW conversion remains editable—double-click the thumbnail and Adobe Camera Raw reopens. This can be very useful

with difficult RAW conversions, or in this example I could go back, remove the grayscale setting, and then do the mono conversion with one or more regular Black and White adjustment layers. Second, the sharpening adjustment can be added as a Smart Filter which can also be edited or completely removed in the future. For good measure, a border was also added as a Layer Style.

So by using the Smart Object and Smart Filter in conjunction, a single layer can hold the RAW conversion, black-and-white rendition, selective sharpening, and a border. It is all non-destructive so you can reverse or fine-tune every setting. In fact, the Photoshop file actually contains the original RAW image data, so a colleague could change the RAW conversion. While it's not necessarily an approach that one would always recommend, it illustrates the powerful possibilities of a highly versatile way of working.

# EDGE SHARPENING

A big danger of sharpening is that it can damage evenly toned image areas. Artifacts may appear, for instance in a child's skin or blue skies, and this is especially harmful if you are working in 8-bit mode or on a JPEG original. Sharpening may also have other undesirable side-effects, such as making digital noise more obvious.



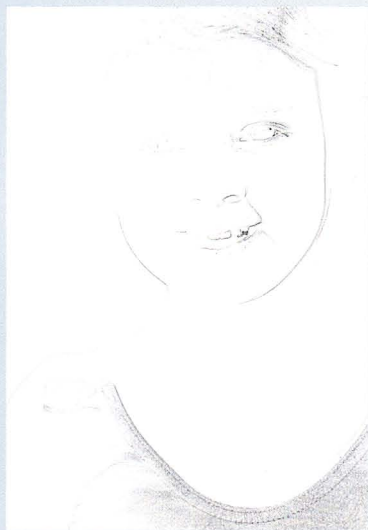
Sharpening is inherently destructive, so it needs to be precisely targeted. The contrast edges are the important feature for sharpening, so if you could select only the image's edges, you could then safely apply much more sharpening to those areas and make the end result look very sharp indeed. This technique is often called "edge sharpening."



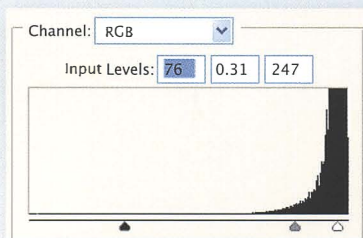
*Left: The final image has been dodged and burned a little, and the edge sharpening technique has been applied.*

*Above: At exactly the same zoom level, it is apparent that the original image is considerably softer than the final.*

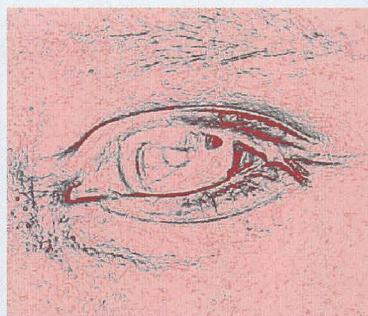
## EDGE SHARPENING



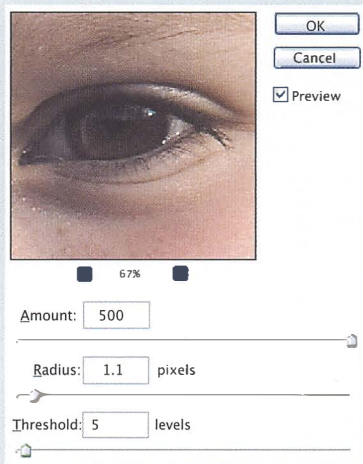
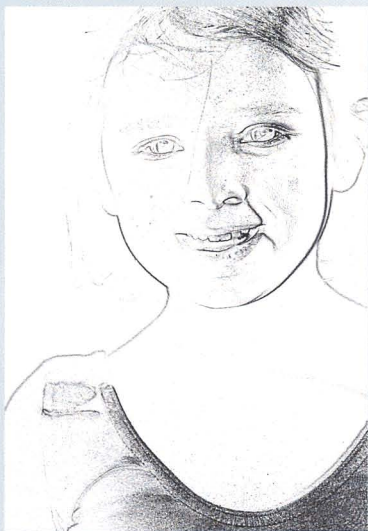
**1** Edge sharpening is a destructive technique that changes pixel brightness values, so make sure you duplicate the image layer first. Then choose *Filter > Stylize > Find Edges*. This converts the duplicate picture into a grayscale line drawing.



**2** Because the black parts of the line drawing will be sharpened and white parts will be unaffected, we need to eliminate any gray areas and clean up the whites. To do this, apply *Filter > Blur > Gaussian Blur* with a low value and use *Image > Adjustments > Levels* to make the blacks and whites much purer. You may need to apply each technique a couple of times, and also consider painting the drawing with a soft brush as a way to target or protect selected features.



**3** Select just the black areas. Activate the Magic Wand (W), adjust its options to a high value such as 30, and make sure the Contiguous check box is not ticked. Zoom in on a black line and click it with the Magic Wand. To avoid unnatural edges, feather the selection using *Alt/⌘+Ctrl/⌘+D*. Here I used a value of 5 and switched to Quick Mask mode (Q) to check detailed selections.



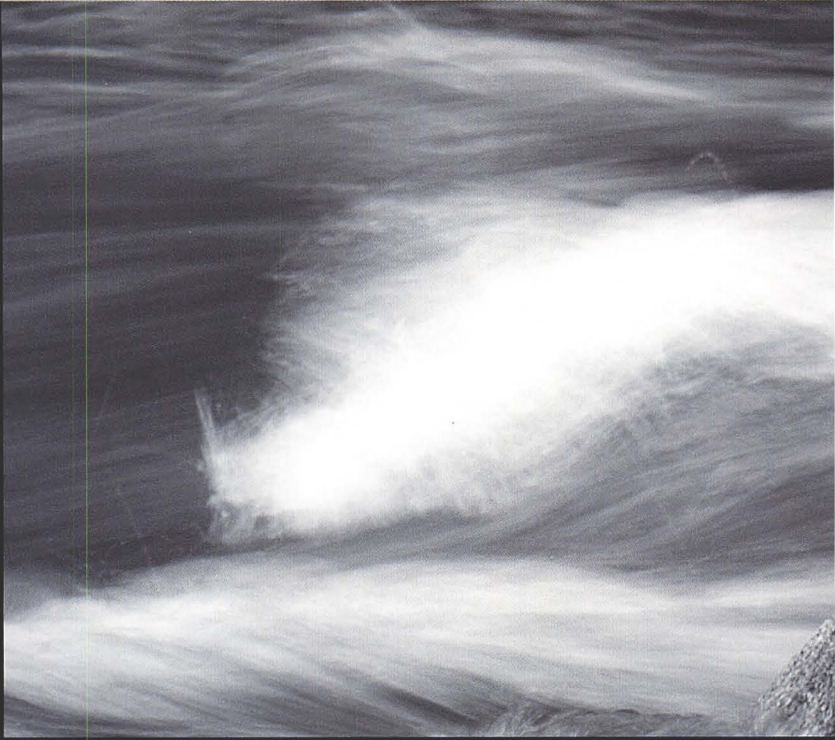
### TIP

*The edge sharpening technique is ideally suited to being recorded as a Photoshop action, but make sure you include enough dialog box pauses and don't just apply the action without creative input.*

**4** When the selection looks right, hide the line drawing layer. Make another copy of the image layer or make it into a Smart Object, and with the selection active, apply the Unsharp Mask using *Filters > Sharpen > Unsharp Mask*. Here I applied a sharpening amount of 500—far more than would be safe without this edge selection technique—and the selection becomes a mask on the image layer.

*Below: The edge sharpening technique has sharpened the eyes without affecting the rest of the face (right). The same Unsharp Mask value is unacceptably sharp when applied to the entire image (center).*







# CREATIVE EFFECTS

## DIGITAL IMAGE WORKFLOWS

