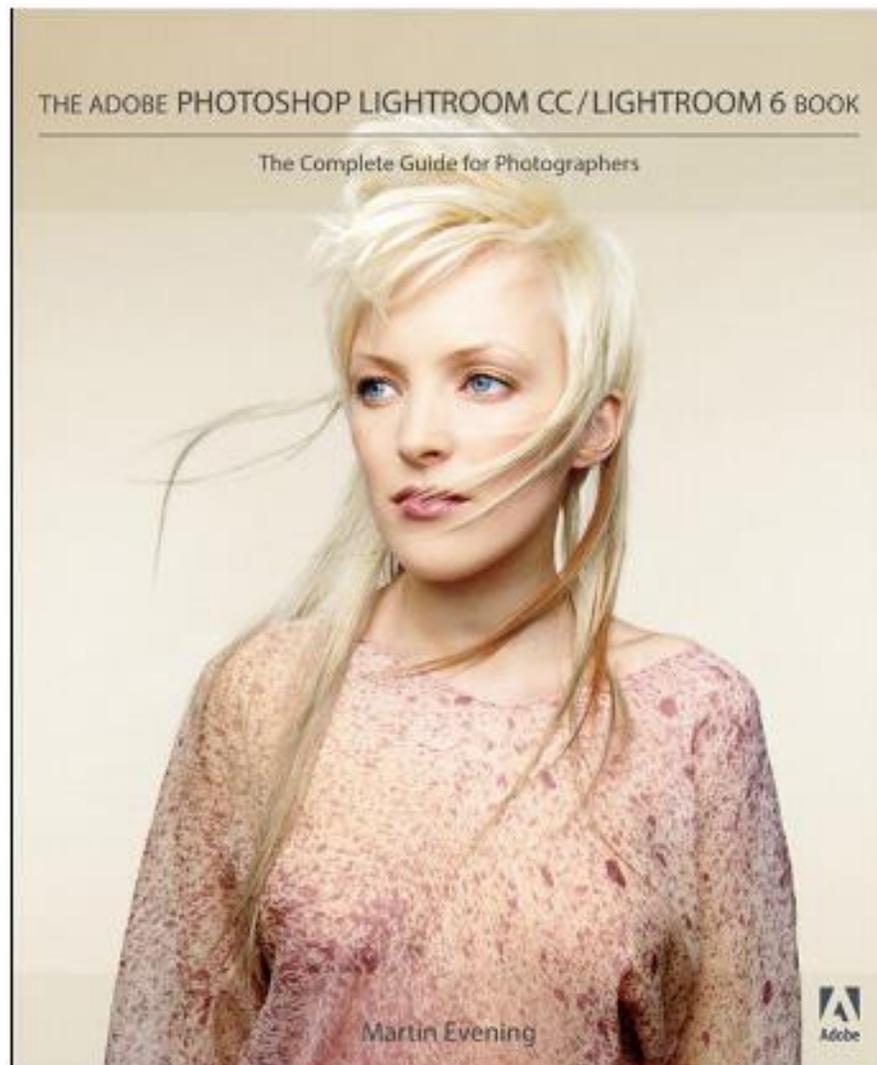


# Sharpening af Raw billeder i Lightroom

# Sharpening in Lightroom

- Moderne strategi for sharpening er at lave capture sharpening af raw billeder og kombinere det med støjdæmpning. Dette vil give et tilfredsstillende digitalt billede der efterfølgende kan efterbehandles i f.eks. Photoshop eller efterbehandling i Lightroom eller Photoshop for Output (print).
- Efterfølgende gennemgås hvordan capture sharpening/støjdæmpning udføres i Lightroom.
- Photoshop raw converter er i det meste identisk med Lightroom og gennemgås ikke yderligere.

# Sharpening – most taken from this book



# Sharpening in Lightroom

A little sharpening at the post-capture stage is usually necessary to produce an image that is sharp enough to look good on the display.

If a photograph is sharpened too much at this stage, you may end up with artifacts that will only be compounded as additional adjustments are made to the image.

Presharpening should therefore be applied in moderation and to raw capture images only.

It is all about striking the right balance between compensating for image softness in the raw file while avoiding the problems that can be caused by any oversharpening at the preliminary stage.

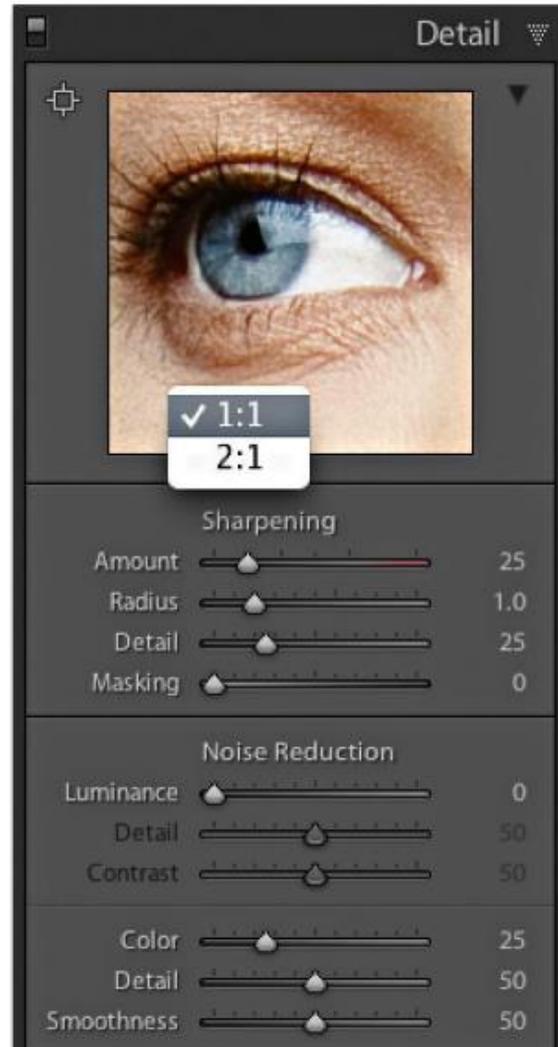
# Sharpening in Lightroom

- Capture sharpening is all about adding sufficient sharpening to a photograph in order to correct for the inherent lack of sharpness that most digital images suffer from.
- If you shoot using raw mode, your photographs will arrive untreated in Lightroom and they will most definitely need some degree of sharpening.
- If the photos you import have originated from a digital camera shot using the JPEG mode, these images will already have been presharpened in-camera.
- The Detail panel sharpening controls in Lightroom are therefore intended for use with photographs that are raw originals or non-raw files that have yet to be sharpened.

# Sharpening in Lightroom

- The main goal with input/capture sharpening is to correct for the lack of sharpness in an image. Capture sharpening is therefore something that you should evaluate on the display using a 1:1 view setting.
- Detail panel controls are therefore designed to let you apply such sharpening in a controlled way so that only the edge detail gets sharpened and the flat-tone areas are preserved as much as possible.

# Sharpening in Lightroom – Detail Panel



# Sharpening in Lightroom

- It should again be noted that while sharpening and noise reduction can be applied to non-raw images, JPEG captures will have already undergone such a transformation, and there is no way to undo what has already been fixed in the image. The benefits of capture sharpening will therefore only be fully appreciated when processing raw images.

# Sharpening in Lightroom

- **Improved Lightroom raw image processing**
- Lightroom 3 was significant for introducing the Process 2010 rendering, which offered better demosaic processing, sharpening, and noise reduction compared to Process 2003.
- The combination of these three factors led to much improved image quality from the Lightroom raw processing engine, and this remains true for the latest Process 2012 rendering.
- It should again be noted that while sharpening and noise reduction can be applied to non-raw images, JPEG captures will have already undergone such a transformation, and there is no way to undo what has already been fixed in the image. The benefits of capture sharpening will therefore only be fully appreciated when processing raw images.

# Sharpening in Lightroom



# Sharpening in Lightroom

- It should be noted that the demosaic processing used in Process 2010/2012 benefits only those cameras that use the three-color Bayer demosaic method.
- The demosaic processing for other types of sensor patterns such as four-color shot cameras and the Fuji SuperCCD™ has not been altered.

# Sharpening in Lightroom

- The next component is the sharpening, which is achieved by adding halos to the edges in an image.
- Generally speaking, sharpening halos add a light halo on one side and a dark halo on the other side of an edge.
- To this end, the halo edges in Process 2010/2012 are more subtle and have been rebalanced such that the darker edges are a little less dark and the brighter edges are brighter.

# Sharpening in Lightroom

- They are there and you notice them in the way they create the illusion of sharpness, but you are less likely to actually "see" them as visible halos in an image.
- Another thing that is addressed is that when you select a Sharpen Radius within the 0.5 to 1.0 range, the halos are narrower.
- Previously, in Process 2003, these halos were quite thick, and it should now be possible to sharpen fine-detailed subjects such as landscapes or fine textures more effectively.
- Lastly, we have the noise-reduction controls, which have options for controlling the luminance and color noise in an image.

# Sharpening in Lightroom – Output Sharpening

- Output sharpening is something that is always done at the end, just prior to making a print, by using the Print Sharpening options in the Print module Print Job panel.
- But note that Lightroom does not allow you to see what the output sharpening looks like on the display. The print sharpening process is hidden from view, and the only way to evaluate print output sharpening is to judge the print.
- The amount of sharpening required at the print stage varies according to many factors, such as the print process, print size, print resolution, and type of paper used. Fortunately, Lightroom uses PixelGenius PhotoKit™ SHARPENER routines at the print stage, so this is now all handled automatically.
- True – unless you are using “Soft Proofing” with a printer profile. Should be handled on a later “Billedbehandlingsmøde”.

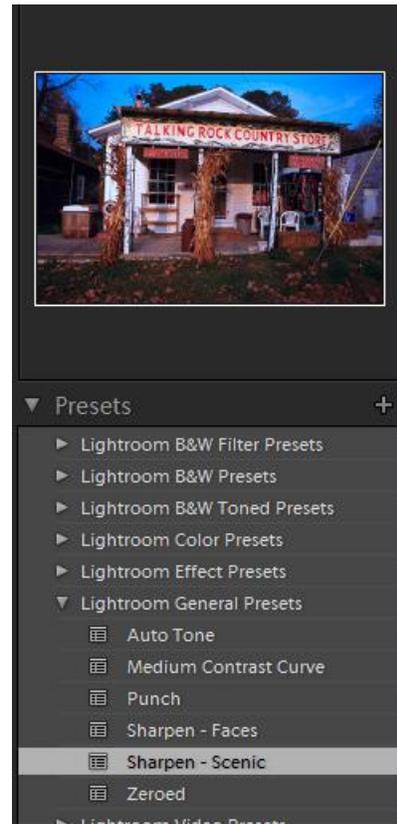
# Sharpening in Lightroom –preset settings

- Perhaps the easiest way to get started is to use either of the two Sharpening presets highlighted below, which can be found in the Develop module Presets panel (these Develop presets are also available via the Library module Quick Develop panel).
- All you have to do is decide which of these two settings is most applicable to the image you are about to sharpen. These can also be a useful starting point when learning how to sharpen in Lightroom. Start off by selecting one of these settings, and fine-tune the Detail panel sliders.

# Sharpening in Lightroom - Presets



# Sharpening in Lightroom - Presets



# Sharpening in Lightroom – Presets Faces

- *The Develop module Presets panel contains two sharpening settings in the Lightroom Presets folder, one suited for face portraits and the other suited for scenic photographs.*
- **Sharpen - Faces**
- To start with, let's look at the two preset settings found in the Lightroom Presets subfolder. Below shows a 1:2 close-up portrait, where naturally enough, the *Sharpen – Faces* preset was applied. This combination of sharpening slider settings is the most appropriate to use for portraits where you wish to sharpen the important areas of detail, such as the eyes and lips, but protect the smooth areas (like the skin) from being sharpened.
- You may wish to strengthen this setting by increasing the Amount, and you may also wish to increase the Masking slider if the skintones are looking a little too "crunchy"—a higher Masking setting should help preserve the smooth tone areas.

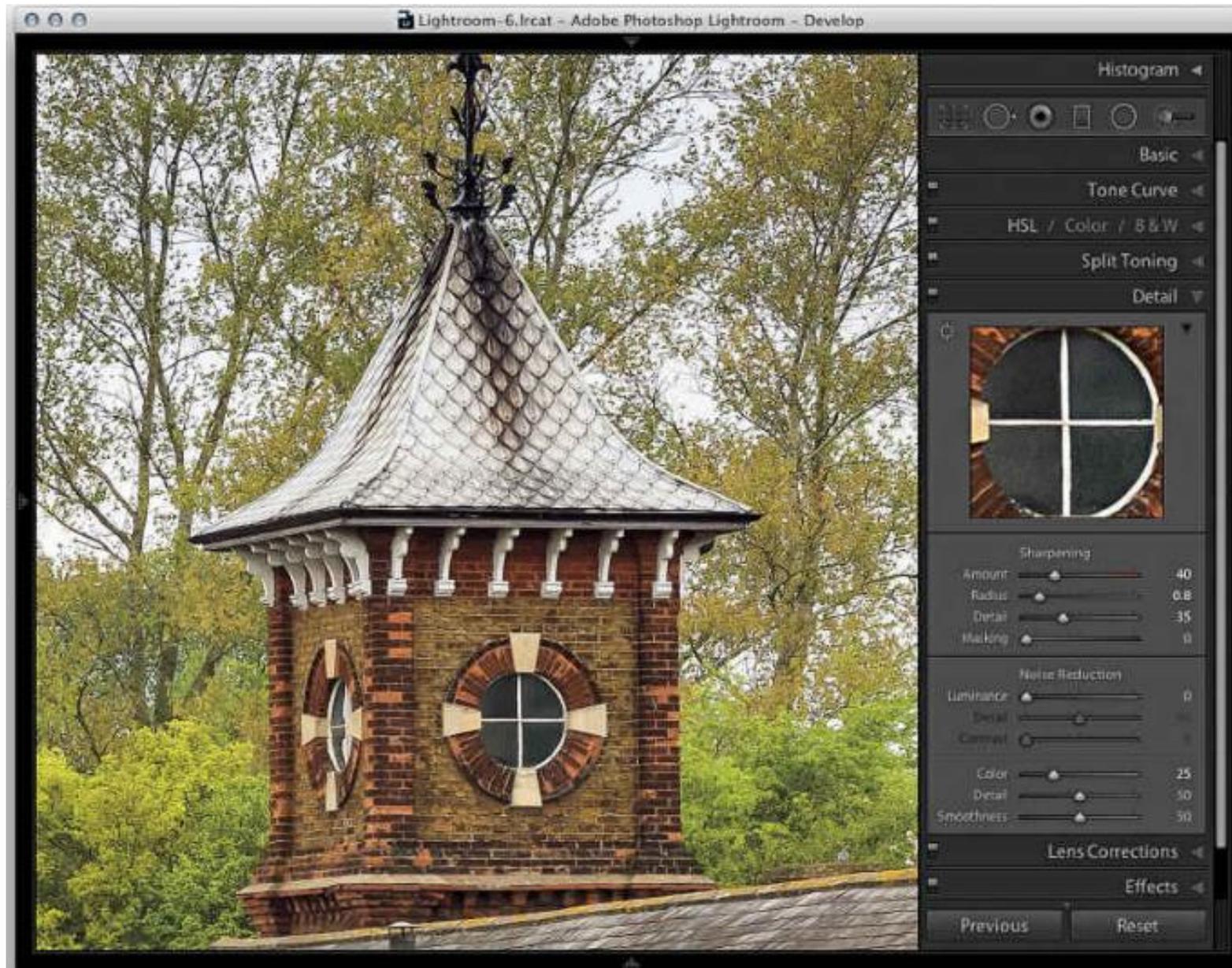
# Sharpening in Lightroom – Presets Faces



# Sharpening in Lightroom – Presets Scenic

- **Sharpen - Scenic**
- The other preset setting you can choose is *Sharpen - Scenic*. This combination of sharpening slider settings is most appropriate for subjects that contain a lot of edge detail.
- You could include quite a wide range of subject types in this category, and below this preset was used to sharpen an architectural photograph.
- Basically, you would use this particular preset whenever you needed to sharpen photographs that contained a lot of fine edges.

# Sharpening in Lightroom – Presets Scenic



# Sharpening in Lightroom - Presets

- The two preset settings described here provide you with a great way to get started and get the most of the new sharpening settings without having to understand too much about how the sharpening in Lightroom works or what the individual sliders do.

# Luminance targeted sharpening

- Lightroom sharpening is applied only to the luminance information in the photograph, and Lightroom always filters out the color content when sharpening.
- This is a good thing because sharpening the color information would enhance any color artifacts.
- Lightroom filters out the color content when sharpening. For this reason, it can be useful to inspect the image in Luminance mode when working with the slider controls. For example, you can hold down the (Alt) key as you drag the Amount slider in the Detail panel to see more clearly the effect the adjustment is having on the image sharpening.

# Sharpening in Lightroom

- **The sharpening effect sliders**
- Let's start by looking at the two main sharpening effect controls: Amount and Radius. These sliders control how much sharpening is applied and how the sharpening is distributed.

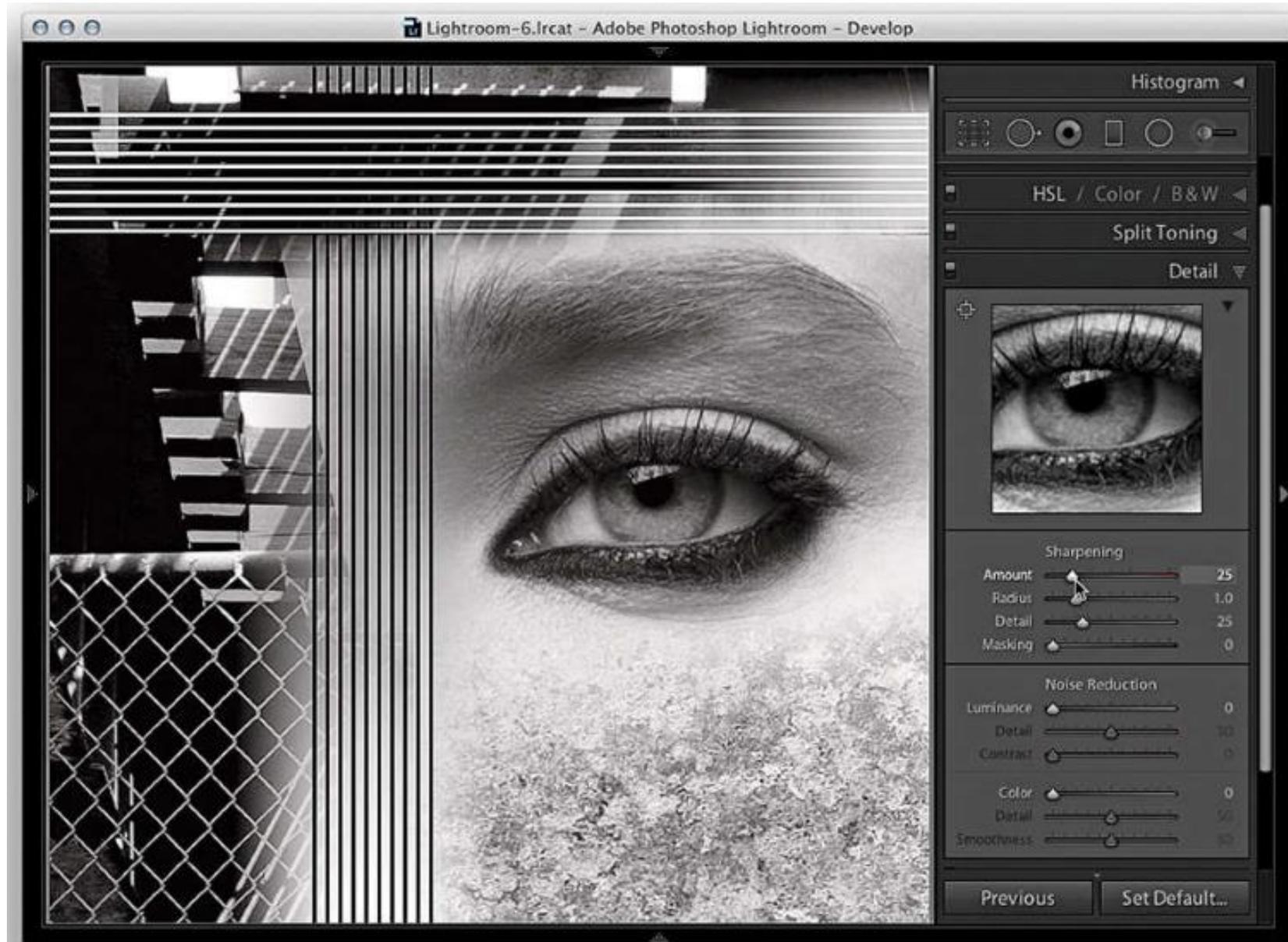
# Sharpening in Lightroom

- **Amount slider**
- The previews shown here and on the following pages were all captured with the (Alt) key held down as I dragged the Sharpening sliders. Seeing the sharpening amount using a grayscale preview helps you concentrate on seeing the sharpening effect.

# Sharpening in Lightroom

- 1. The Amount slider is basically like a volume control. The more you apply, the more you sharpen the image, and in this respect it is similar to the Amount slider in the Unsharp Mask filter. The Amount range can go from 0 (which applies no sharpening) to a maximum sharpening setting of 150, where the slider scale goes into the red.
- The sharpening is somewhat excessive at 150, but there is a reason for that: you can use the sharpen suppression controls (described later) to dampen a sharpening effect. You probably will not ever need to set the sharpening as high as 150, but the extra headroom is available should you need it. In this example, you can see how the sample image looked using the default 25 Amount sharpening.

# Sharpening in Lightroom



# Sharpening in Lightroom

- **2.** As you increase the Amount sharpening to 100, you can see how the detail in the image looks a lot crisper.
- On its own, the Amount slider is a fairly blunt instrument to work with, but it is the ability to modify the distribution of the sharpening and the ability to mask the edge halos that make Lightroom sharpening so special.
- The important thing to remember here is not to overdo the sharpening. The intention is to find the right amount of sharpening to correct for the lack of sharpness that is in the original raw image and not let any sharpening artifacts become noticeable at a 1:1 view.



Lightroom-6.Ircat - Adobe Photoshop Lightroom - Develop



Histogram



HSL / Color / B&W

Split Toning

Detail



Sharpening

Amount  100  
Radius  1.0  
Detail  25  
Masking  0

Noise Reduction

Luminance  0  
Detail  30  
Contrast  0  
Color  0  
Detail  50  
Smoothness  50

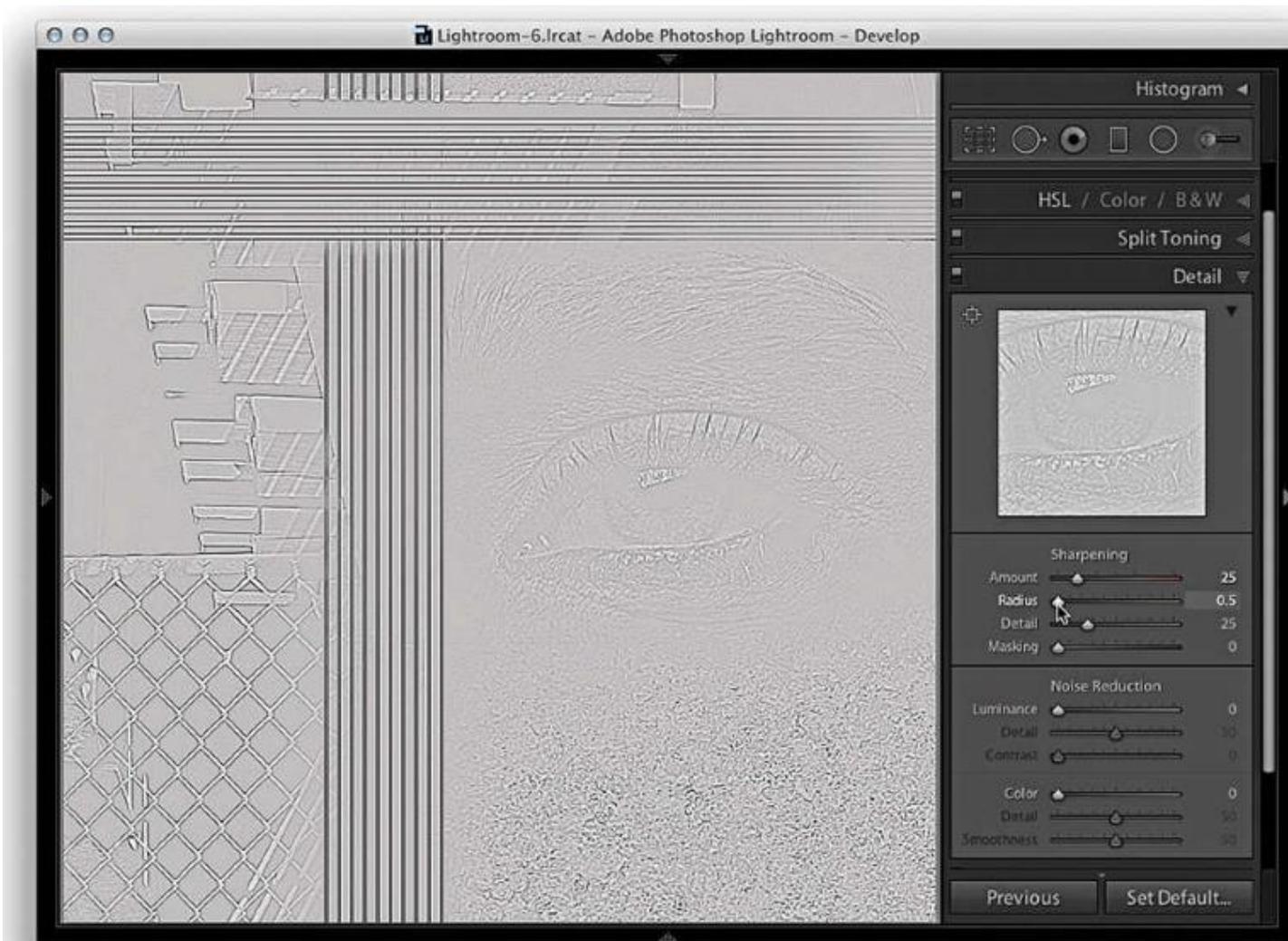
Previous

Set Default...

# Radius Slider

- **1.** For this step and the next, the (Alt) key was held down to isolate the effect that the Radius setting would have on the image.
- At the minimum Radius setting, you can see how a small Radius has a greater effect on the narrow edge detail, such as the wire fence, and has very little effect on the soft edge detail, such as the eye and eyelashes.
- Notice also the effect a small Radius setting has on the crisscross lines. This demonstrates that for high-frequency detailed subjects such as architecture photographs or landscapes, you will often benefit from choosing a Radius setting that is smaller than 1.0. When using Process 2010/2012, the Radius edges values in the 0.5 to 1.0 range are calculated to produce finer halo edges than was previously the case with Process 2003. This has resulted in narrower, razor-sharp edges when sharpening fine-detailed images with a low Radius setting. If you toggle between using Process 2003 and Process 2010/2012, you should see quite a difference here.

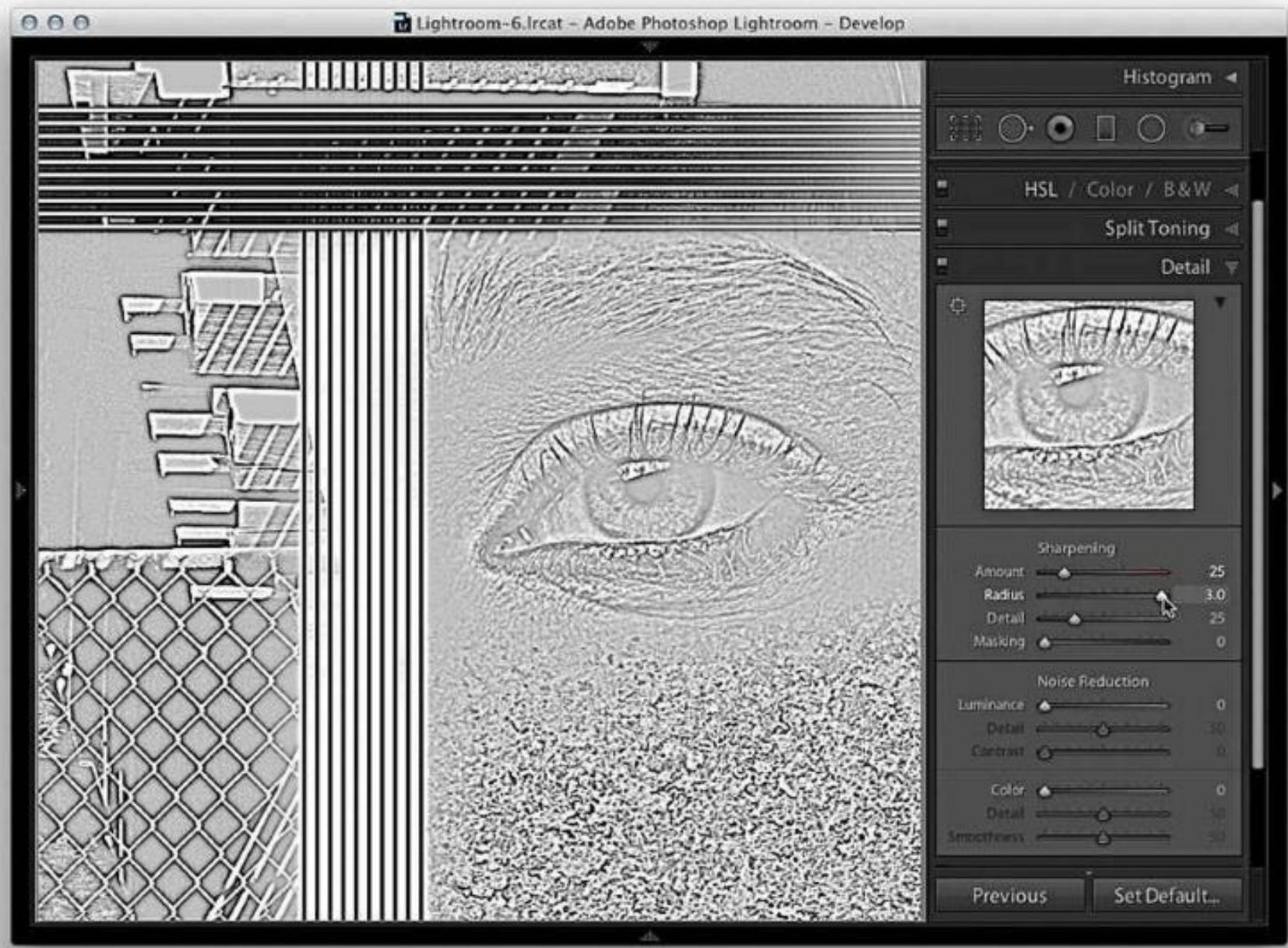
# Radius Slider



# Sharpening in Lightroom - Radius Slider

- **2.** As you increase the Radius slider to its maximum setting, you will notice how the halo width increases to the point where the halos have less real sharpening effect on the fine edge detail. The sharpening around the wire fence area looks kind of fuzzy, but at the wider setting, there is now more noticeable sharpening around the eyelashes and the eye pupil. For this reason, you will find it is usually more appropriate to select a Radius higher than 1.0 when sharpening photographs that contain a lot of soft-edged detail, such as portraits.
- The halo edge calculation in Process 2010/2012 has also been rebalanced such that the darker edges are a little less dark and the brighter edges are a little brighter. They are there and you notice them in the way they create the illusion of sharpness, but you are less likely to actually "see" them as visible halos in a sharpened image.

# Radius Slider



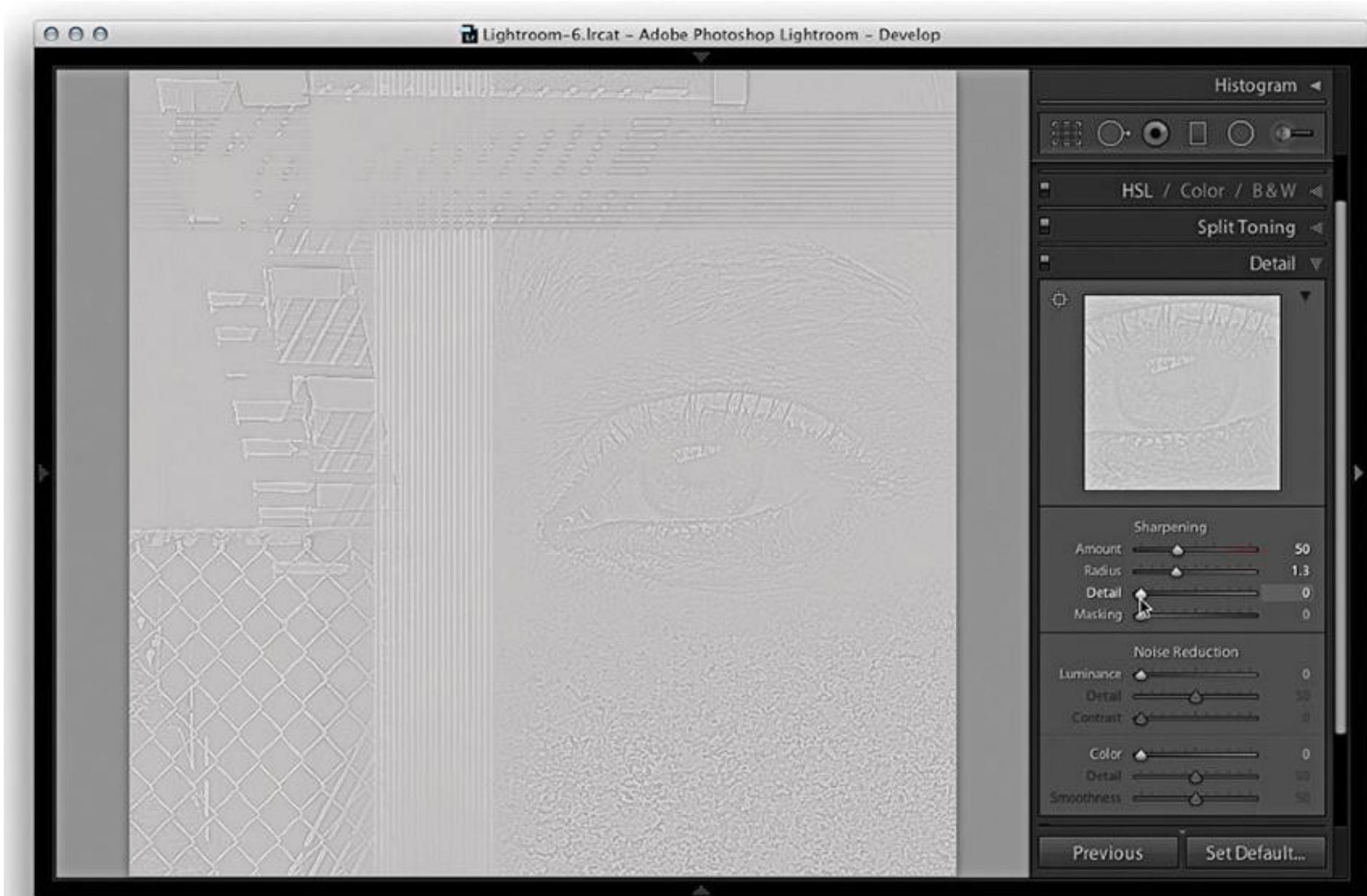
# Modifying Controls

- **The modifying controls**
- The next two sharpening sliders act as modifying controls that can moderate or dampen the effect that the Amount and Radius sharpening settings have on an image.
- **Detail slider**
- The Detail slider cleverly suppresses the halo effect, allowing you to concentrate the sharpening on the edge areas. This, in turn, allows you to apply more sharpening with the Amount slider, adding sharpness to the edges, but without generating noticeable halos around them. The default setting for the Detail slider is 25. As you take the slider below this value, it suppresses the amount of contrast in the halos.
- In Process 2010/2012, as you set the Detail slider above 25, it acts as a "high-frequency concentrator," which is to say it biases the amount of sharpening, applying more to areas of high frequency and less to areas of low frequency.

# Detail Slider

- 1. In this step, the Detail slider was set to 0 with the (Alt) key to preview in isolation the effect this slider adjustment was having.
- When the Detail slider is at this lowest setting, nearly all the edge halos are suppressed. The combination of a low Detail setting and a medium to high Radius setting allows you to apply a strong sharpening effect to bring out details like the eye and eyelashes while suppressing the halos on the smooth skintones.

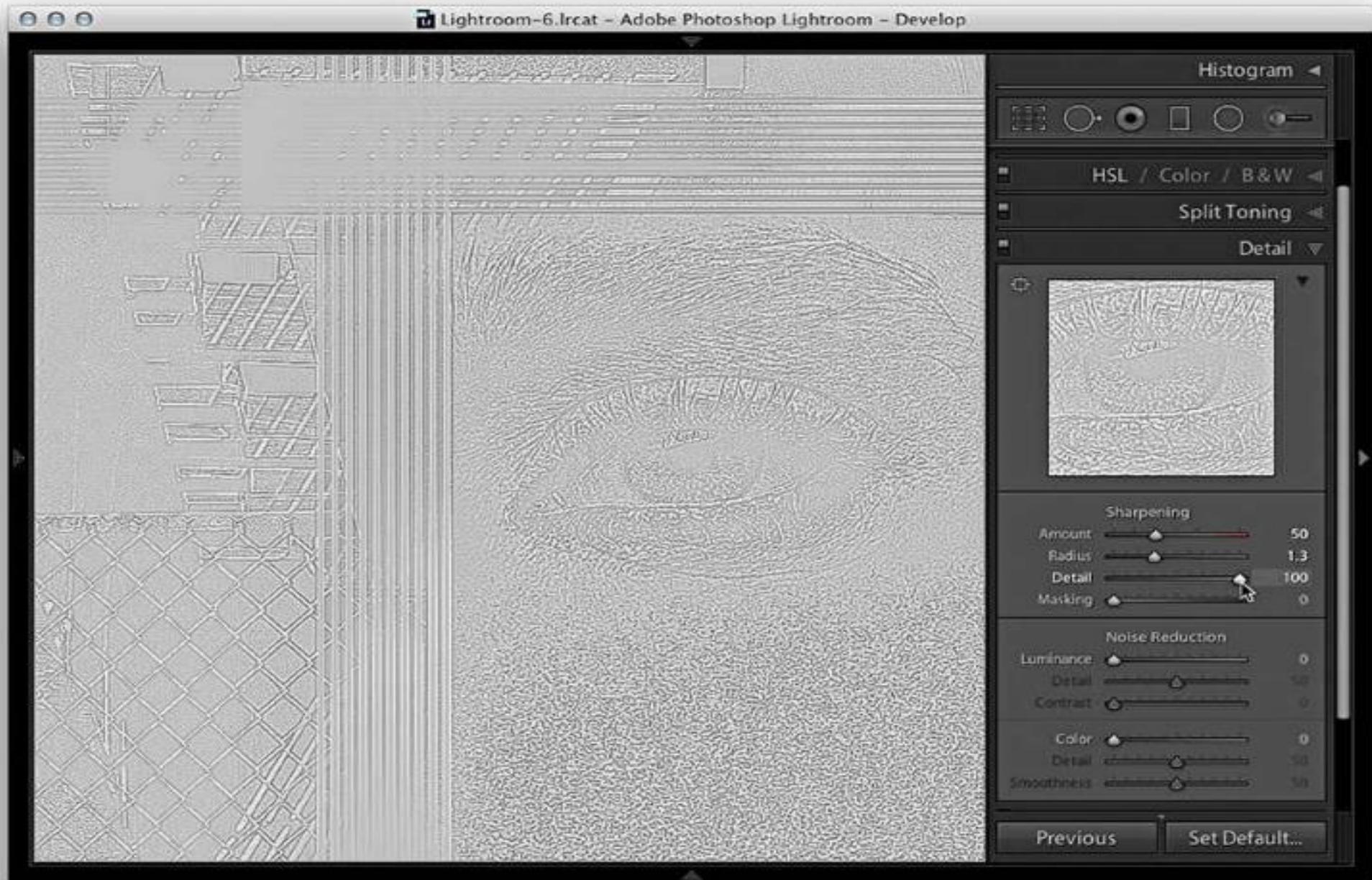
# Detail Slider



# Detail Slider

- **2.** When the Detail slider is raised to the maximum setting, all of the sharpening effect is allowed to filter through, and the high-frequency areas will be further enhanced.
- One of the minor changes in the Process 2010/2012 sharpening means that higher Detail slider settings now do more to exaggerate the highest possible edge detail in the image. This can result in the Lightroom sharpening now emphasizing more those areas with fine-textured detail (including noise). If this is likely to cause problems, you may want to avoid setting the Detail slider too high, or you can increase the amount of Masking that is applied. On the other hand, it is now safer to set the Detail slider to a maximum value of +100 if you think this is required, but only on low-ISO images where the inherent noise in the image you are sharpening is low enough not to cause a problem.

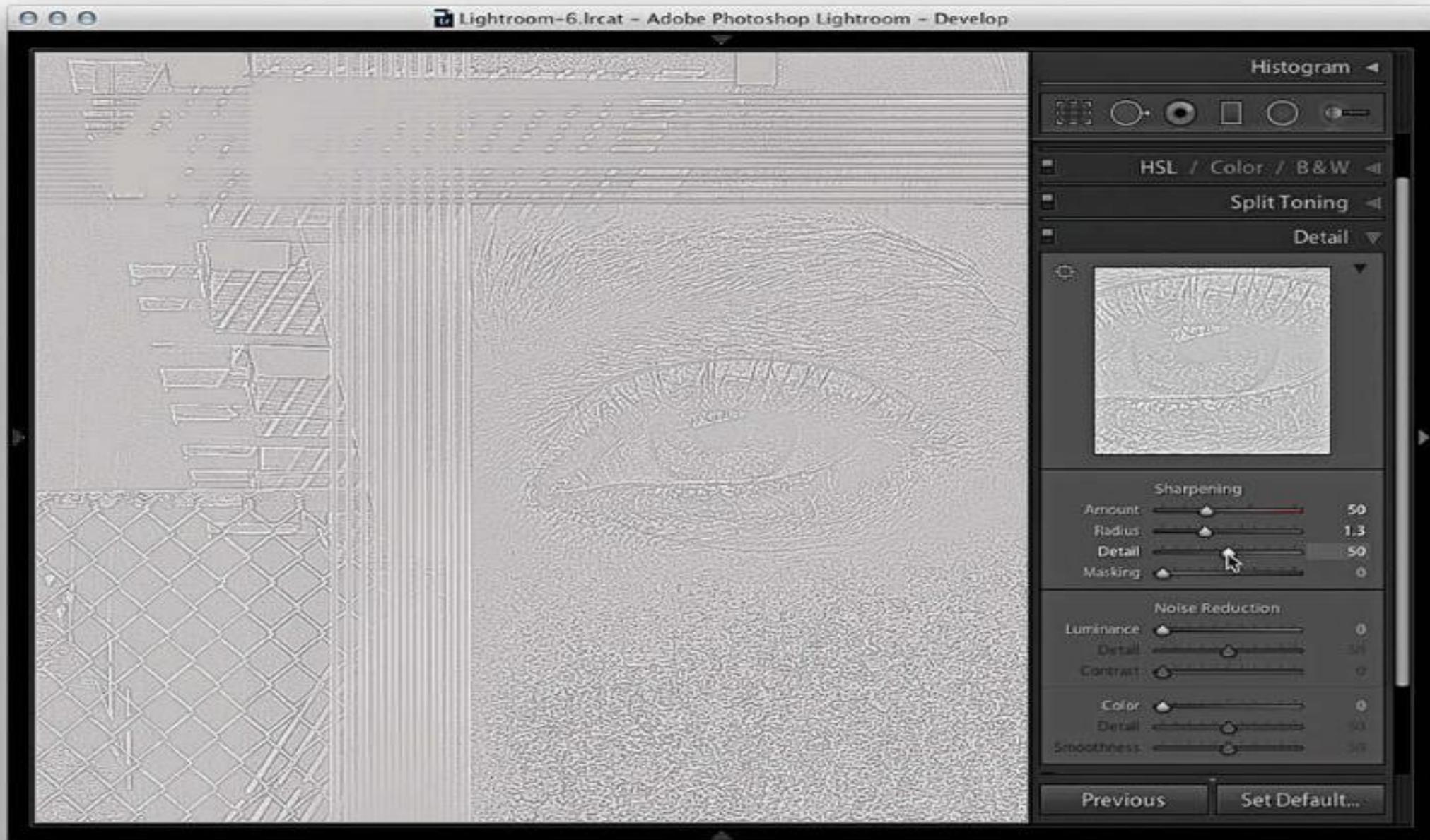
# Detail Slider



# Detail Slider

- **3.** When the Detail slider is set to a midpoint value between these two extremes, we see how the Detail slider can be used to target the areas that need sharpening most.
- If you refer back to the sharpen preset used at the beginning, a lower setting of 15 is suitable for portrait sharpening because it does a good job of suppressing the sharpening over the smooth tone areas. A higher Detail setting will carry out less halo edge suppression and is therefore more suitable for emphasizing fine edge detail.

# Detail Slider



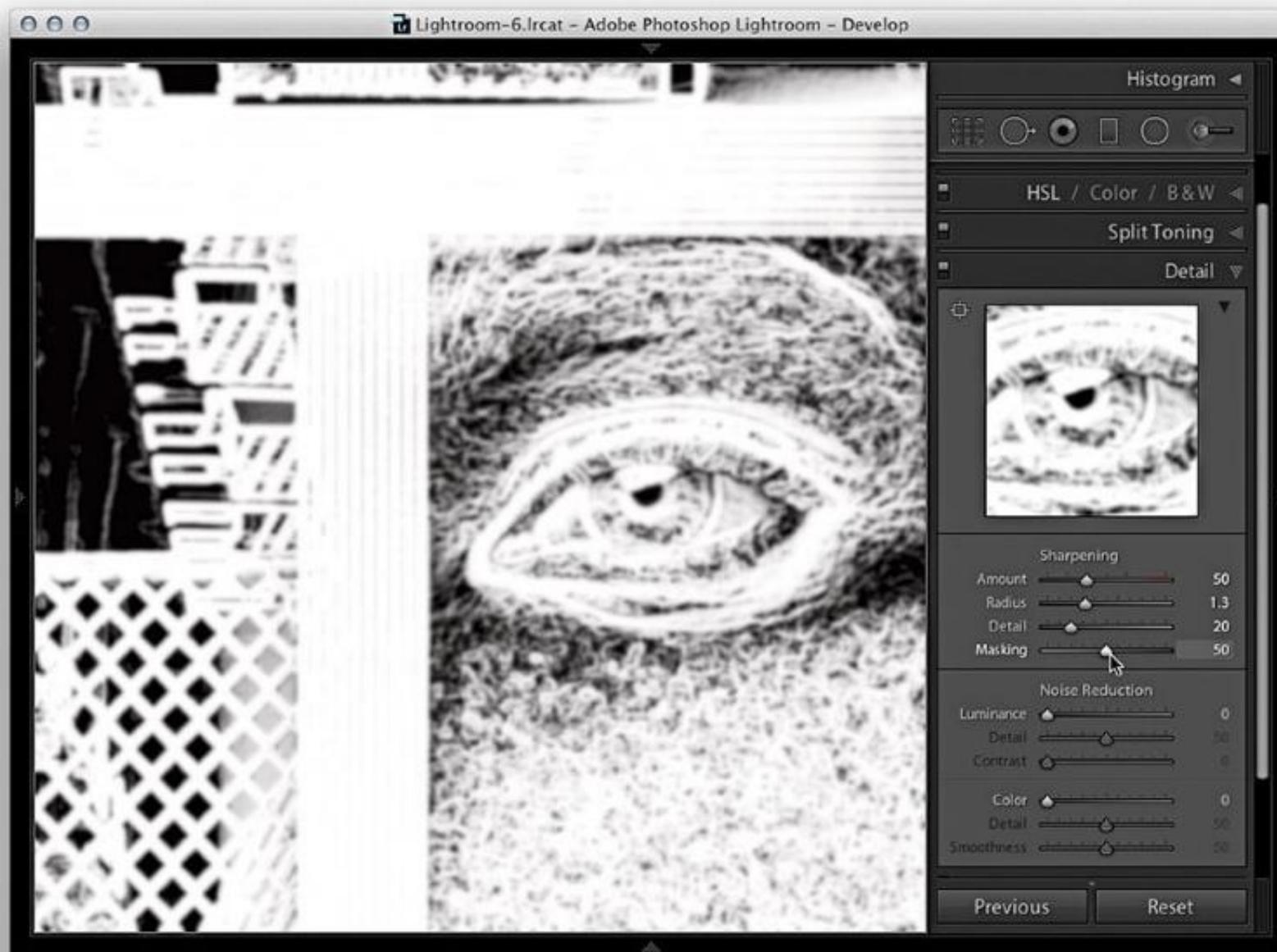
# Masking slider

- The Masking slider adjustment adds a final level of suppression control.
- The basic concept behind the masking control is that you can use the Masking slider to create a mask that is based on the image content and that protects the areas you do not want to have sharpened. If you take the Masking slider down to 0, no mask is generated and the sharpening effect is applied without any masking. As you increase the Masking setting, more areas are protected. The mask is generated based on the image content; areas of the picture where there are high-contrast edges remain white (the sharpening effect is unmasked) and the flatter areas of the picture where there is smoother tone detail turn black (the sharpening effect is masked).
- **Masking slider preview mode**
- The Alt mode previews for the Masking slider shows a mask that limits the sharpening adjustment. The best way to interpret this preview is to imagine the preview of the sharpening adjustments as being like a sharpening layer above the image and think of the masking preview as a layer mask that has been applied to that imaginary sharpening layer.

# Masking slider

- 1. In this example, The Masking slider was set to 50 and the Alt key held down to reveal the mask preview. At this midway setting, you will notice how the flatter areas of the picture are just beginning to get some mask protection, such as the skintone areas around the eye. If you are using Process Version 2010/2012, the (Alt) preview can be seen at all view settings. If you are using Process Version 2003, the (Alt) previews can be seen only if the image is viewed at 1:1 or higher.

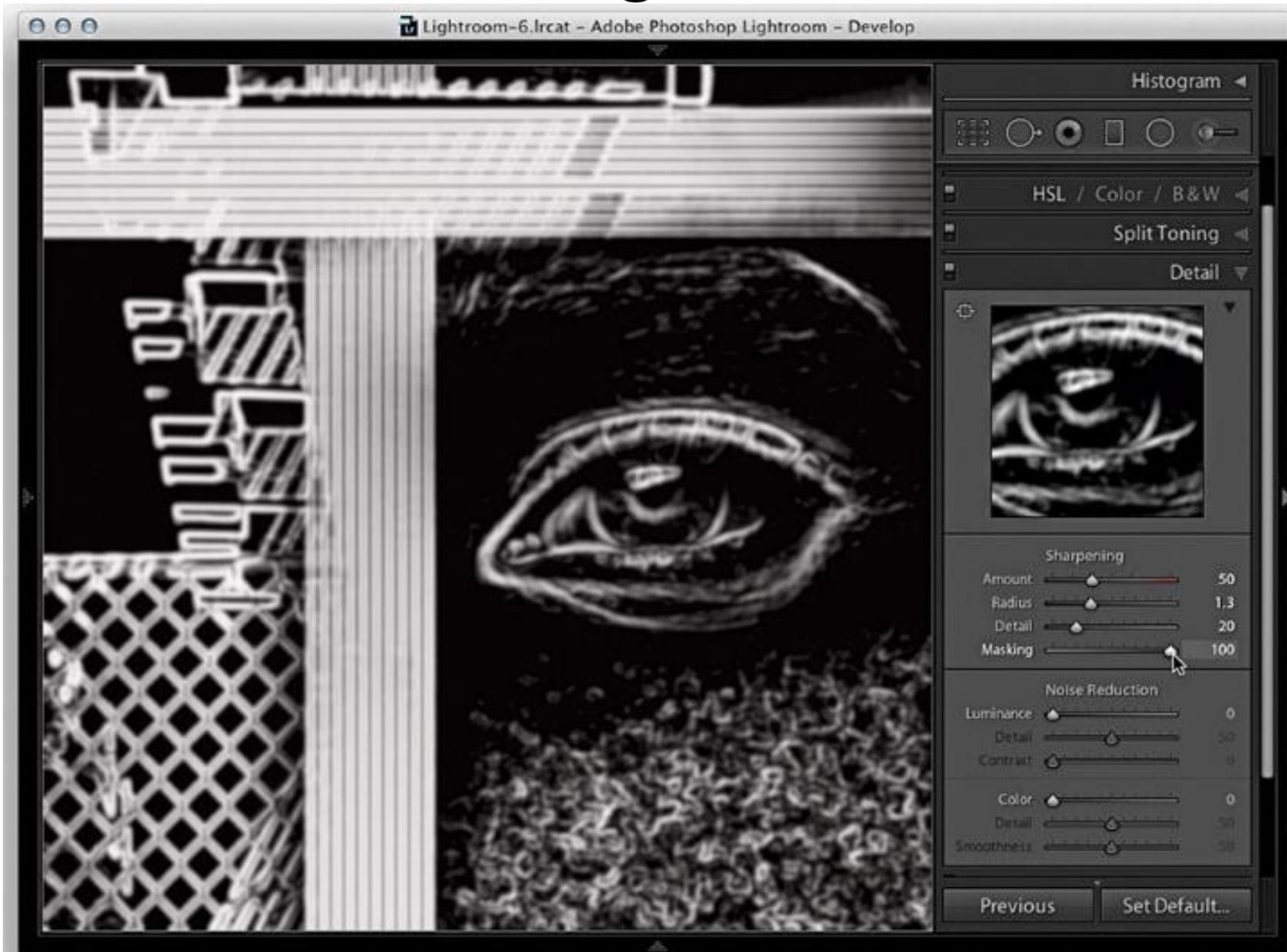
# Masking slider



# Masking Slider

- **2.** As the Masking setting is increased to the maximum setting of 100, you can see how more of the flatter tone areas are now protected while the high-contrast edges are preserved.
- At this extreme setting, the Lightroom sharpening is only applied to the white mask areas. The black portions of the mask are completely protected, and no sharpening is applied here.
- Generally, you set the Masking slider high for images that contain fine detailed areas that you do not want to enhance (such as skin), and you set it low for images where you do wish to enhance the fine textured areas.
- However, if you take into account the enhanced sharpening that can be obtained using the Detail slider, it would seem that most subjects can benefit from having a small amount of Masking applied to them.
-

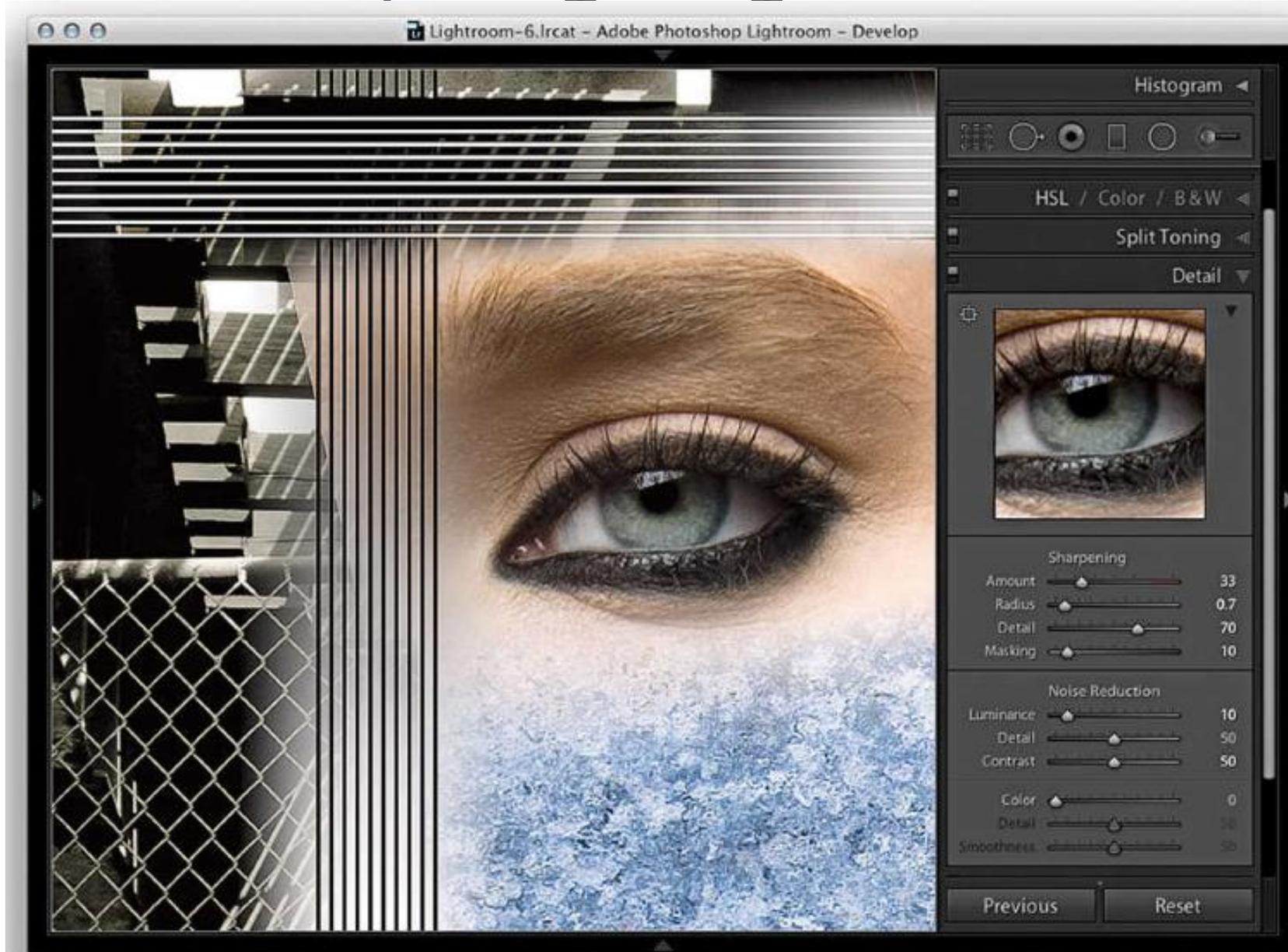
# Masking Slider



# Applying sharpening adjustments

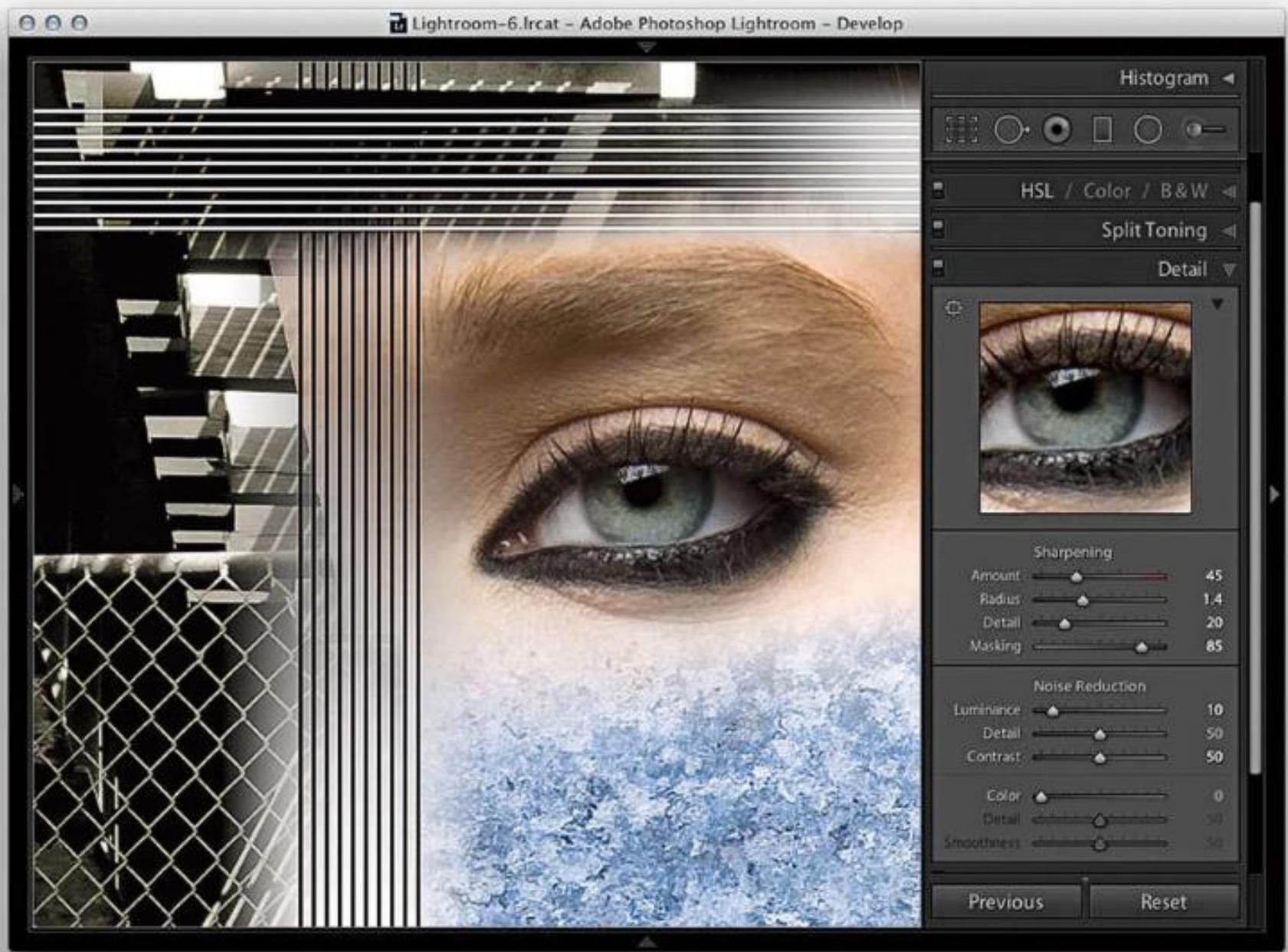
- Now that I have given you a rundown on what the individual sharpening sliders do, let's look at how you would use them in practice to sharpen an image.
- 1. For this first step, I adjusted the Sharpening sliders to provide the optimum amount of sharpening for the fine detail areas. I applied a Radius of 0.7, which added fine halos around the edge details (such as the wire fence) and a Detail of 70, which limited the halo suppression.
- I applied an Amount of 33 to make the fine edge detail nice and crisp and set the Masking slider to 10, which meant that only a small amount of masking was used to mask the sharpening effect.
- I also adjusted the Luminance slider (setting this to 10) because most images, even those that have been shot using a low ISO setting, may benefit from some Luminance noise reduction.

# Sharpening in Lightroom



# Sharpening in Lightroom

- **2.** In this second example, I adjusted the Sharpening sliders to provide the optimum amount of sharpening for the soft-edged detail around the eye.
- I applied a Radius of 1.4 to build wider halo edges around the eyelashes, but at the same time, I used a Detail setting of 20 to suppress the edge halos. The Radius setting still had an effect on the sharpening, but the Detail slider was nicely suppressing the halo edge effect to produce a smoother-looking sharpening effect.
- I took the Masking slider all the way up to 85, so that I could target the sharpening on just those areas that needed sharpening most (that is, the details in the eye and eyelashes).
- You will note that the Amount was set to 45. This is a higher value than the default 25 setting, but this is because the sharpening was being substantially suppressed by the Detail and Masking sliders, so it was necessary to apply a larger Amount setting here.



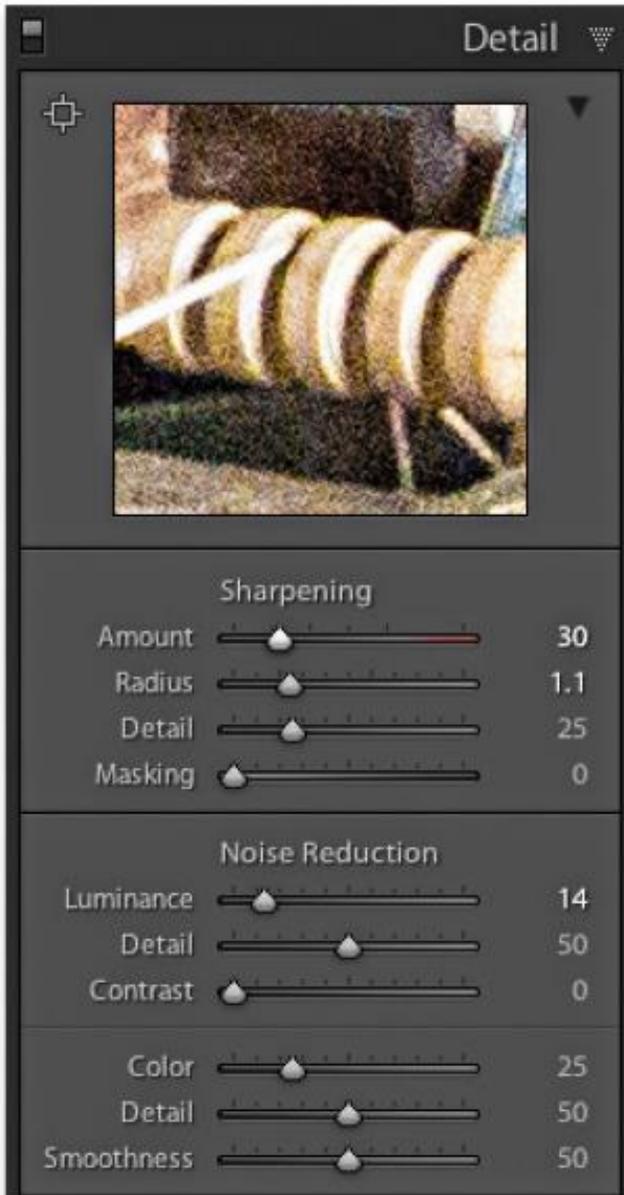
# Noise reduction

- All digital captures contain an underlying amount of noise that is generated by the sensor, but it is only as the ISO is increased that the noise is amplified and therefore becomes more apparent to the eye.
- If you shoot with a good-quality digital camera at the standard ISO settings, you should be hard-pressed to see this noise. But not all cameras are the same, and some camera sensors are particularly prone to showing noise, especially at the higher ISO capture settings, and it is here that the application of noise reduction in Lightroom can prove really useful.

# Luminance noise reduction

- The Luminance slider in the Detail panel can help smooth out luminance noise, which is the speckled noise that is always present to some degree but is more noticeable in high-ISO captures. The default Luminance setting is 0 and you could try raising this to around 5 to 20, but it should not be necessary to go beyond 50 except in extreme circumstances.
- Since luminance noise reduction inevitably smoothes the image, it is all about finding the right balance between how much you set the Luminance slider to suppress the inherent noise and how much you sharpen to emphasize the edges (but without enhancing the noise).
- Lightroom does a good job of reducing any white speckles in the shadows, and the Luminance noise reduction has further improved in Process 2010/2012 to provide the smoothest luminance noise reduction possible.

# Luminance noise reduction



# Sharpening in Lightroom - Noise

- The Noise Reduction Detail slider acts like a threshold control for the main Luminance slider. The default setting is 50, and the Luminance Detail slider sets the noise threshold of what the noise-reduction algorithm will determine to be noise. As you drag to the right, this reduces the amount of smoothing and preserves more detail but may cause noisy areas of the image to be inappropriately detected as detail and therefore not get smoothed. As you drag to the left, this smooths the noise, but be warned that some detail areas may be inappropriately detected as noise, and important image detail may get treated as noise and also become smoothed.
- Luminance noise tends to have a flattening effect at the macro level where the underlying texture of the noise grain appears so smoothed out that in close-up the image has something of a plastic look to it. The Luminance Contrast slider therefore allows you to restore more contrast at the macro level, but it does so at the expense of making preserved noise blobs more noticeable.

# Sharpening in Lightroom - Noise

- With the Luminance Contrast slider, the default setting is 0 and the smoothest results are achieved by leaving the Luminance Contrast slider at this default 0 setting. However, doing so can sometimes leave the noise reduction looking unnatural and plastic-looking and the details may appear to remain too smoothed out. Dragging the slider to the right allows you to preserve more of the contrast and texture in the image, but at the same time can lead to increased mottling in some high-ISO images. It is worth pointing out here that the Contrast slider has the greatest effect when the Luminance Detail slider is set to a low value. As you increase the Luminance Detail, the Contrast slider will have less impact on the overall luminance noise reduction.

# Color noise reduction

- Color noise occurs due to the inability of the sensor in low light levels to differentiate color because the luminance is so low. As a result, we see errors in the way color is recorded and, hence, the appearance of color blobs in the demosaiced image.
- Color noise is usually the most noticeable aspect of image noise, and the Color slider's default setting of 25 does a fairly good job of suppressing the color noise artifacts while preserving the color edge detail.
- If necessary, you can now take the slider all the way up to 100.

# Color noise reduction

- However, as you increase the Color noise slider, this can result in color bleeding or in the fine color details of an image becoming desaturated. This kind of problem is one that you are likely to see only with really noisy images that contain fine color edge details.
- Most of the time, it is not something you are likely to be concerned with, but where this is a problem, the Detail slider can help. As you increase the Color Detail slider beyond the default setting of 50, you will notice how it preserves more detail and prevents the color edges from bleeding or becoming desaturated. Just be aware that as you increase the Color Detail setting, this can lead to color speckles appearing along the preserved edges. To understand the effect this slider is having, you may want to zoom in to see a 400% view as you adjust the slider in order to gauge the effect on the image.

# Noise-reduction tips

- I suggest you get to know your camera and how the sensor responds to different lighting conditions. Some cameras fare better than others in low-light conditions, and there will always be a trade-off between shooting at a medium ISO setting with a wider lens aperture and shooting at a high ISO setting with a smaller lens aperture or faster shutter speed. Also, consider using a tripod or image-stabilizing lenses as an alternative to shooting at the highest ISO setting.
- Note that setting the Luminance slider too high can make the image appear over-smooth and doing so can compromise the sharpness.
- Above all, do not be too paranoid about noise. There is no point in trying to remove every bit of noise, as the print process can be very forgiving!

# Sharpening in Photoshop

- The Raw converter is principally identical to the presharpen tool in Lightroom.
- Further sharpening can be performed in Smart Sharpen.

# Sharpening in Photoshop- Camera Raw

- The sharpening and noise reduction controls in Camera Raw have been much improved.
- Therefore the present recommendations are to carry out the capture sharpening and noise reduction for both raw and scanned TIFF images in Camera Raw before they taken into Photoshop.
- The sharpening in Camera Raw is very similar to sharpening in Lightroom.