

SHARPENING

These notes describe some of the many methods of sharpening images in Photoshop. For those with little experience, the High Pass method is recommended as being easy and quick to use and yielding good, consistent, results.

WHY sharpen?

To ensure that those parts of the image that should be sharp, are sharp.

Generally it is the edge detail that is sharpened and not relatively featureless areas of tone, in particular smooth skin.

Images for inkjet printing require rather more sharpening than is required for those viewed on a computer screen.

Over sharpening an image detracts and should be avoided.

There are many methods of sharpening, simple and complicated; some are better than others in avoiding unwanted effects (like colour fringing and halos).

WHEN to sharpen:

It is sometimes advised that Raw files benefit from initial (input) sharpening where none, or a minimum, is applied in-camera. The method is similar whether carrying out the Raw processing in Lightroom or Photoshop. **The main sharpening is carried out as the last operation after an image has been sized and all corrections/manipulations have been made in Photoshop.**

INPUT sharpening:

In current versions of Lightroom (vers2) or Photoshop (CS4) the method is the same.

*Note. Although not strictly a sharpening control, the **clarity** slider in the Adobe Camera Raw processing has a positive effect on the apparent sharpness of an image. This control increases the edge contrast of an image's **mid tones** and can, with advantage, be increased to about 70-80 on **most images**. I have seen a reference to the possibility of colour fringing caused by too high a value on some images so be aware. I have never seen this.*

The sharpening controls are found under the **detail** tab. There are four: Amount, Radius, Detail and Masking.

Before making adjustments increase the image view to 100%.

The amount slider does what you would expect and can be moved from its default of 25 to about 60 - 70.

The **radius** determines how far from the edge pixels the sharpening is applied and is usually left at its default of 1.0. A smaller value will select fine detail for sharpening.

At zero setting the **detail** control applies maximum halo suppression. If the option (PC alt) key is pressed the effect of increasing the slider setting can

be seen. As the value is increased more sharpening is applied. Be aware that as slider value increases the risk of halos is also raised and only modest increases are suggested (say up to 50).

Finally the **masking** slider has a significant influence on how the sharpening is applied across the image. Hold the option key (PC alt) again while the slider is increase from its default of 0. At zero the image is completely white showing that the sharpening is applied across the whole image. As the value is increased smooth toned areas start to become black which indicates where the masking is applied. As the slider is moved towards maximum all except the edges are masked and the sharpening confined to them (the edges).

Finally, this initial sharpening should be modest; remember the main sharpening will be applied later in Photoshop.

SOME SHARPENING METHODS

The following list is not exhaustive.

UNSHARP MASK

Increase the image size to at least 50% (PC **Ctrl+** which increases the image size)

Under the **Filter menu** select **Sharpen** » **Unsharp Mask**.

There are 3 sliders to adjust:

Amount

Radius

Threshold

The **Amount** controls how much and the value will depend upon the type of image, the image size and whether it is to be printed or viewed on screen.

Radius determines how many pixels out from the edge will be affected.

Threshold determines how different a pixel must be from its neighbours before any change is made. A low threshold number increases the intensity of the sharpening.

A suggested settings start point:

Amount: will depend upon the factors mentioned above but a starting point could be 100.

Radius: Start at **.5** and try and avoid going much higher. A respected source (Thom Hogan) suggests it is better to apply unsharp mask twice, with values of **.5** and **.3**, than once with **.8**. The reason offered is that any value above **.5** starts to affect more than one pixel beyond the transition point which can start to produce visible halos especially with large **amount** values.

Threshold: Start at **0** and **leave it there if the image is reasonably noise-free**.

Values above 0 start to mask the sharpening effect and apply it to only part of the image.

After adjusting the sharpening values, click **OK** and then go up to the **Edit menu** and choose **Fade Unsharp Mask**, in the fade dialog box leave **opacity** at **100%** and select **Luminosity** from the **modes** popup menu. Click **OK**.

This last step applies the sharpening just to the luminosity areas of the image which helps to avoid colour halos and other problems.

Note. In the fade dialog box reducing the opacity setting from 100% can be used to directly reduce the sharpening effect, if it appears too much. Alternatively if after completing the sharpening at 100% it appears that more sharpening is required, you could apply the sharpening all over again and then, if necessary, use the opacity slider to restrict the second application to, say, 40% more sharpening.

Notwithstanding the specific setting advice offered above the following suggested settings have been offered by reputable sources. You may wish to try them:

Soft subjects (animals, flowers and people for instance), try the following:

Amount 150%

Radius 1.0 pixels

Threshold 10 levels

Portraits try:

Amount 75%

Radius 2 pixels

Threshold 3 levels

General subjects including landscapes

Amount 120%

Radius 1 pixels (lower values of 0.3 or 0.6 will sharpen the finer detail only)

Threshold 3 levels

Any of the above you use regularly could be made into Actions and applied quickly with little effort.

Although the above sharpening method is described as being carried out on the **basic background layer** it is recommended that it is performed on a **copy of the background layer**:

Duplicating the background layer

Use **Ctrl. J** (PC) to duplicate the layer. Go to **Window** menu and select **Layer** if the layers display is not visible. Make sure the duplicate layer is selected (click on it). Then if you carry out the sharpening on the duplicate layer it is

easy to see the effect by clicking on the 'eye' of the copy layer to turn it off and on.

This is a non-destructive process so that if something goes wrong you can simply delete the duplicate layer and start again.

After successfully applying the sharpening to the duplicate layer, merge the two layers by clicking the **Flatten Layers** command in the layers drop down list (top far right) on the layers display.

LAYER MASK and sharpening

the other advantage of carrying out the sharpening on a copy layer is that (before it is flattened) a layer mask can be used to remove sharpening from parts of the image and in a way that allows it to be corrected and/or restored if a mistake is made. And all non-destructively (you are not affecting the background layer in any way).

To add a layer mask and carry out the procedure mentioned above:

With the layers drop down panel open and with the background and copy layer visible, click on the icon at the bottom which is third from the left (small grey square with a white circle in the middle). This adds a white mask to the right of the duplicate background layer. Then:

Click on the **mask rectangle** just created to ensure it is active (a border round to the mask), click **D** to select Black and White for the foreground and background colours (towards the bottom of the tools bar) and **B** to select the brush tool. Make sure the **foreground** colour is **black** not white; if necessary click the **X** key to change the order.

Make sure the brush tool is a reasonable size (in relation to what you intend painting out) and with a soft edge.

The brush tool adjustments are at the left of the top tool bar, click the small arrow to the right of the word brush. The brush diameter and hardness can now be adjusted in relation to how detailed an area is to be worked on. Note that with the hardness control all the way to the left, the brush is most soft.

Alternatively a ready sized brush can be selected from the drop down panel with its size and hardness already set. The left and right **square bracket keys** on the key board can be used to reduce and increase brush size.

Check that the **mode** is set to **normal** and that both the **opacity** and **flow** controls are set to **100%**. These controls are at the screen top to the right of the brush adjust area.

You can now start painting with black to paint out the sharpening where necessary, perhaps from areas of skin in a portrait. If you make a mistake, just change the colour from black to **white** and **paint back** the sharpening. It

is often easier with a face to remove the sharpening from all of it and just paint back (with white) the eyes, lashes eyebrows etc. with a small brush (hardish?) afterwards.

If a gradual change from sharpened to unsharpened is more suitable, or convenient, lower the opacity of the brush from 100% to, say, 30% and paint as appropriate.

More UNSHARP MASK

This technique applies extra sharpening to just the detail in an image that can stand it. The sharpening is applied (selectively) more than once, as follows:

Under the **Filter** menu choose **Unsharp Mask**, enter appropriate values for sharpening the whole image.

Duplicate this background layer (**Ctrl. J**) and press **Ctrl. F** to repeat the sharpening with the same settings. Then **press** and **hold** the **Alt** key while **selecting a layer mask** at the bottom of the layers panel (third icon from the left). This will add a mask **filled with black** to the layer.

Press **B** for the brush tool and select **white** as the foreground **colour** (press **D** and then **X** if it is necessary to change the foreground colour to white). With a suitably sized soft edge brush, paint **in** the details you want to **apply** the **extra sharpening** to. That is it.

Another way to sharpen progressively over the whole image is to use a relatively low amount of sharpening and after running the sharpening once, run it again, and again if required. Repeating with the same settings can be initiated either with **Ctrl. F** or, go up to **Filter** and click the **Unsharp Mask** command that is first in the list below.

View the results with the image at 100% and stop when necessary, or return to the previous run by going to **Edit »Step Back** if you have overdone it.

HIGH PASS Sharpening:

Duplicate the background layer (**Ctrl J**), then go to **Filter » Other** and select **High Pass**, the image is greyed out and a dialog box is displayed with a **radius** control at the bottom. If the image is not greyed out, click to enable **preview**. Move the slider to the right and observe the edges becoming visible and then more prominent as the slider is increased. As the radius is increased the image colour starts to appear. When this occurs the sharpening is affecting more than the edges and is too high. The practical range of radius settings is generally from about 2 up to 5 or 6.

Click **OK** and then change the **blending mode** (to the left of the opacity slider at the top of the layer window) from **normal** to **overlay** (**soft light** and other blending modes in this section can be tried), finally you can use the **opacity** control to reduce the sharpening effect if it looks too aggressive (I never need to).

Note that the duplicate layer on which the sharpening is performed should be the top layer.

If there are multiple layers below the duplicate layer, Ctrl+Alt+Shift+E to fill the top layer with a flattened version of the image without affecting the layers below.

Note. If you have any correction/comment on the above please email me.

Keith Chaloner Issue 3 dated 03/02/2010