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Unsharp Masking How to Make Your Images Pop!

Are your images dull and lack pop? Do you want your pictures to stand off the page more? Well maybe you are not using Unsharp Masking correctly. Unsharp Masking is a technique that has been used in photographic images since the 1930s. This technique was very difficult to do in the film based world, but with today's digital images and modern image processing software, the use of Unsharp Masking is a simple step performed while toning images. This step is critical when preparing images that will print on a newspaper's press.

The Unsharp Masking method utilizes an optical illusion effect produced when there is a superimposition of both a positive and negative transparency, but where the positive image is deliberately blurred or made unsharp. Thus when the positive and negative images are combined the resultant image gives the illusion or perception that the combined image is sharper. The basic idea to Unsharp Masking is to highlight or increase the contrast between light and dark areas or areas of different colors. The technique emphasizes the fine detail, so the final print seems sharper.

The following images illustrate the effect of the Unsharp Masking. The left image is unadjusted and the one on the right has the Unsharp Masking filter applied.



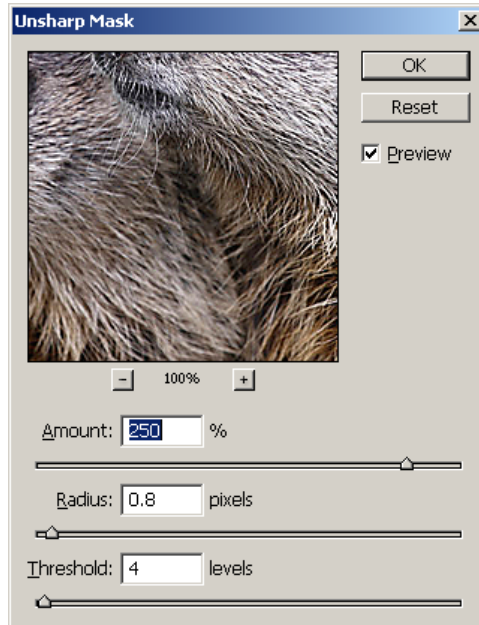
Original Image

Image with Unsharp Masking

When using imaging processing software, such as Photoshop or GIMP, the Unsharp Masking tool is found under the filter settings. As you open the filter, there are several settings critical to understand.

These settings are:

- Amount
- Radius
- Threshold



Amount: Use this control to vary the amount of edge sharpening. The Overall adjustment range is from 1 to 500 percent. It should be noted that this is not a linear increase, and the higher settings for amount show more of an exponential effect. This controls the magnitude of how much darker or lighter the edge border becomes. It does not affect the width of the transition. The following images show the change in the amount setting, while the other settings remain the same.



No sharpening

Medium amount setting

High Amount setting

Radius: This controls the width (in pixels) of the edges that the Unsharp Mask filter will modify. Your range varies from 0.1 pixels for fine control to 250 pixels for broader sharpening effects. Higher radius settings may cause unwanted halos in the image. For newspaper printing a range of 0.6 to 1.8 is suggested.



Low radius setting

High radius setting

Threshold: This controls the difference in brightness between adjacent pixels that must be present before the edge is sharpened. That is, you need to have a distinct contrast between adjacent pixels along an edge in order to sharpen the edge. Your choices range from brightness values of 0 to 255. Selecting a low value causes edges with very little contrast difference to be emphasized. In simple terms, the higher the Threshold, the more the image appears to smooth out, because less sharpening is being applied to adjacent pixels.

Threshold settings:



Low

Medium

High

So where do I start the settings for Unsharp Masking? Unsharp Masking should be the last step in toning the image. Once all of the other toning corrections are done, view the image at 100% on screen. Note: the images

should be at the same size as the intended printing on press. In the images below, the Unsharp Masking was applied at the same settings for two alternate sizing methods. The image on the left was first sized for this document (2.4 in x 3 in) and then the filter was applied. The image on the right, the Unsharp Masking was applied first (image size 8 in x 10 in), and then the image was resized to the document image size. As you can see, there is a much more pronounced effect on the left side image and the reduced size image has lost all of its apparent sharpness. The closer you can be to the final image size for printing prior to the use of the Unsharp Masking filter, the better the results will be.



Resized then sharpened

Sharpened then resized

We would recommend that you start with a setting in Photoshop of 250 for the amount, .8 for the radius and 4 for the threshold. Depending on the image requirements you can increase or decrease these settings until you just get to the desired sharpness you want to achieve.

Photo credits: D. Cheeseman 2010