Filters and sharpening

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These notes were written to accompany tuition at Amersham Photographic Society, focusing on just the key facts needed to master each aspect of digital image manipulation with Photoshop Elements.

1. Digital filters

Most keen photographers have screwed a filter on the front of their lens to achieve a creative effect or correct a colour cast. Digital filters can achieve similar results but can also do things that have never before been possible, such as sharpening a slightly out-of-focus image.

Digital filters are software that can be used to manipulate all, or part of, an image. They are added to Photoshop by simply copying the files into the *Program Files>Adobe>Photoshop>Plug-Ins* folder on your computer. When Photoshop starts up it looks in this folder and lists all the filters that it finds in the *Filter* menu. Photoshop comes with a lot of useful filters already loaded and these are likely to be all that you will need initially. However there are many companies and individuals offering additional filters to download from the Internet. Some of these are free and some are offered commercially.

2. Applying filters

It is worthwhile loading an image and trying every filter on it just to see what they can do. Many are very intense and will change your image dramatically and obviously, to achieve some pseudo-artistic effect, but don't expect to just apply one of these and win an art competition! Many filters have dialogue boxes which allow you to adjust the settings of the filter and preview the effect. With others there is no adjustment at all. *Filter>Filter Gallery* brings many filters together in on one screen but frustratingly, not all. The key to the successful use of filters is to apply them with subtlety, for example by applying the filter to a copy of the image in the *Layers* palette and then reducing the *Opacity* of that copy to blend it subtly with the original underneath. Some filters are complex programs in their own right.

3. Sharpening

How many photos have been ruined by a little camera shake or the autofocus aimed at the wrong spot? Well, in the bad old days there was little that could be done, but in the shiny happy world of today we can at least create the illusion of sharpness where none previously existed. In addition to camera trouble, digital images usually benefit from some sharpening (although it may be done in the camera), so it's good to make the sharpening filter your friend.

Aside from the *Enhance>Auto Sharpen* menu command (which lacks control), there are several distinct approaches to sharpening available in Photoshop Elements. *Enhance>Unsharp Mask* is probably the most well-known, but may not be the best. It has inherited this name from a traditional photographic technique in which unsharp and sharp images are combined to produce a halo mask that can be used to increase the apparent sharpness of the original. Ignore the name – it does actually sharpen! Sharpness is all about fooling the eye by increasing the contrast of edges in the picture. The *Unsharp Mask* filter has three interrelated settings: *Amount* controls the percentage increase in edge contrast, *Radius* controls the edge width in pixels and *Threshold* controls the tonal change (out of 256 possible levels) that is considered to be an edge. Start with a high value for *Amount* (above 150%), a *Radius* of 1 pixel and *Threshold* of 0 levels. Next increase the *Threshold* to prevent fine detail from being sharpened (like grain, noise or

skin pores) and limit the effect to the edges. Then increase the *Radius* until wanted detail is obliterated or an unsightly halo is produced and then back off slightly. Finally decrease the *Amount* to a 'reasonable' level. Don't finally judge the result until you have printed the image – the effect will look more pronounced on the screen than on paper. Sharpening by a small amount, two or more times, is more controllable than one big step. This process is not very scientific but you'll know if you've overdone it and experience will give you a feel for the right amount.

The *Sharpen* tool (a triangle icon which may be masked by the *Blur* filter icon [a 'teardrop'] on the *Tools* palette) enables areas to be brushed over, i.e. selected for sharpening, or areas avoided – such as sky or skin tones. It can be applied to the 'Active' layer or all layers. The *Enhance>Adjust Sharpness* menu command is also more flexible than *Unsharp Mask*, allowing one to attempt to correct directional motion blur (camera shake) in one option.

The menu command *Filter>Other>High Pass* has become my favourite as an alternative to sharpening with *Unsharp Mask*. Make a copy of the image layer, ensuring that it is above the original in the *Layers* palette. Apply the *High Pass* filter to the copy at a low *Radius* setting (you can see the areas affected on the grey screen) and then set the *Blending Mode* in the *Layers* palette for the copy layer to *Overlay*. Toggle the '*eye*' icon on the copy layer on/off to see/hide the sharpening effect. (For further details see the Digital Group meeting notes for Nov 2013 and May 2012 on the APS Members' Forum.)

Remember that sharpening (like any filter) only works on the 'Active' layer so in order to sharpen a multi-layer image you will either need to flatten it first, or sharpen each visible layer individually. Manipulating an image after sharpening it can create unsightly edges, so *it's best to perform sharpening last*. Although the process of sharpening can appear miraculous, it cannot recover a seriously out-of-focus image and if over-done can produce an artificial-looking, 'obviously digital' image.

4. Other useful filters

Some other Photoshop filters that I use regularly are (from the *Filter* menu): *Blur>Gaussian Blur* and *Blur>Motion Blur; Noise>Add Noise; Distort>Diffuse Glow*. *Filter>Correct Camera Distortion* is a powerful tool to correct lens distortions, add or remove vignetting, and correct perspective distortion. *Filter>Adjustments>Photo Filter* simulates the warming, cooling and coloured filters familiar to traditional photographers. There are many free Photoshop filters (or 'plug-ins') to download: see *www.thepluginsite.com*. The filters from *www.topazlabs.com* and *www.niksoftware.com* are very popular, often available on special offers. Filters can also add more advanced features from Photoshop CS but omitted in Photoshop Elements.

5. Filter tips

- If you are applying a filter (e.g. *Blur*) to part of an image on a separate layer surrounded by transparency, the *Lock transparent pixels* icon in the Layers palette will prevent the filter from extending into the transparent area. Unchecking this box will produce a more natural blend with the layers below.

- In a very simple image, filters can sometimes be more effective if they have something to work on. e.g. noise.

- For some filters the shape of the selection within which they are applied can be important, e.g. pond ripples created with *Distort>ZigZag>Pond Ripples* are unlikely to have the right perspective unless applied within a rectangular selection which is wider than it is tall.

- Because of the way filters work, applying a filter several times at a low setting may produce a different effect from applying the filter once at a large setting.

- Similarly, the resolution of the image will often affect the result of a filter.

- A couple of useful shortcuts: *Ctrl+F* re-applies the last filter used; *Ctrl+Alt+F* does the same but shows the dialogue box for the filter first.   © Steve Brabner 2014