

Photoshop Elements Distilled

These notes were written to accompany tuition at Amersham Photographic Society. Each section comprises just the key facts needed to master one aspect of digital image manipulation with Photoshop Elements.

Viewing and saving files	<i>Page 2</i>
Image resolution, size and quality	<i>4</i>
Photo printing	<i>6</i>
Tone and colour correction using Photoshop Elements	<i>8</i>
Using tools in Photoshop Elements	<i>10</i>
Making selections in Photoshop Elements	<i>13</i>
Using layers in Photoshop Elements	<i>15</i>
Filters and sharpening using Photoshop Elements	<i>19</i>

Viewing and saving files

Steve Brabner

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1. Opening and viewing files

File>Open is the most common route to opening an existing image from hard disk or CD; you can open several files at once. To open several adjacent files, click on the first and then *Shift+Click* on the last. To open non-adjacent files, *Control+Click* on each one. View the image full-screen by selecting *View>Fit on Screen*, clicking the *Fit Screen* button or double-clicking the *Hand* tool. By opening the *Navigator* (*Window>Navigator*) the further magnification of the image can be easily controlled and you can pan around without getting lost. If you have a scroll wheel on your mouse you can also use this to zoom in and out. This feature may need to be switched on at *Edit>Preferences>General>Zoom with Scroll Wheel*.

There are keyboard shortcuts in Photoshop for almost everything and a few are really worth memorising. *Control+Spacebar* followed by a click or drag of the mouse will zoom in, and *Alt+Spacebar* will zoom out. When zoomed in, holding the spacebar down allows you to move around the image by dragging the mouse. These will still work when other dialogue boxes are open, unlike other methods.

Finally, *View>Actual Pixels* or double-clicking the *Zoom* tool will display the image at 100% magnification, which means that each pixel in the image is shown by a single pixel on the display. This is very important for checking your image for dust, scratches and flaws before printing. Occasionally it is a good habit to view your evolving image without the clutter of palettes and menus. Under the *Window* menu there are various options for switching off the Tools, Palettes, Bins and other clutter on the screen but later versions of Elements don't provide a simple shortcut to de-clutter the screen. The *File>Save As* command offers many different formats in which image files can be saved. Here is a brief guide to the most useful ones.

2. File compression

Image files are very large and take up a lot of space on your hard disk. It is common practice to compress image files to reduce their size. The two mechanisms by which you can do this are *lossy* or *lossless*. Lossy compression degrades the image whereas lossless compression does not harm the image at all. The benefit of lossy compression is that much smaller file sizes can be achieved and for this reason it is widely used. Compression is achieved simply by saving the image with an appropriate file format. However, a compressed image cannot be viewed or manipulated in any way. Opening the file in a program such as Photoshop to view it involves expanding it back to its full size. If it is subsequently re-saved as a compressed file it will have been compressed twice and will be significantly degraded. Bear this in mind when deciding upon a strategy for saving files which should not be repeatedly compressed with lossy formats. Simply viewing a JPG and closing it without saving does no damage.

3. Common file formats

3.1. Photoshop (.psd): this should be the default format for images being manipulated in Photoshop. PSD files are large but within them, layers, channels, paths, colour profiles, notes and other useful information will be automatically included. Although this is a proprietary format, Photoshop is so widely used that it is accepted by most software. N.b. be careful not to select similar-looking formats by mistake (like Photoshop EPS or Photoshop PDF) from the drop-down menu. Photoshop offers you the format that you used last time as a default. Consequently if you make a wrong choice, you may continue to use that format many times until you notice the mistake.

3.2. JPEG (.JPG): JPEG stands for the Joint Photographic Experts Group, who defined this standard for compressing image files. JPEG files are up to 20 times smaller than .PSD files and are commonly used to transmit photos over the Internet or save storage space on a hard disk. It is good netiquette to reduce the file size and use .JPG whenever you e-mail an image to keep transmission times to a minimum. JPEG files cannot include layers or other Photoshop-specific information. When saving an image as a .JPG you are offered a choice of the degree of compression. Minimum compression (i.e. maximum file size) is the best choice for important images that may be printed, but images which will only ever be viewed on the screen can be compressed much more heavily, e.g. Medium (5).

Digital Cameras typically produce .JPGs and may compress the image heavily in-camera. Confusingly, when viewing and manipulating .JPGs within Photoshop the window title bar says e.g. Church.JPG but they are actually in a native internal format. If you re-save them as .JPGs again you will compound the damage being done to the image quality so be careful to always save them in a lossless format – typically .PSD whilst working on them. Using *File>Save for Web* enables you to actually see any deterioration in the image that will be caused by .JPG compression. The original image is displayed alongside a compressed version of the image for comparison. Although I stress the damage done by JPEG compression, it's a fact of life and no reason to avoid this useful .JPG format – just be aware of it and the possibility of cumulative damage.

3.3. Tagged Image Format (.TIF): This format is a good choice for universal compatibility across different machines and software packages. It produces a large file, although additional LZW compression may be offered, which is lossless.

4. Resizing and resampling

Whilst editing an image you can specify both its physical (e.g. printed) dimensions and pixel dimensions by going to *Image>Resize>Image Size*. Within this palette, *Document Size* determines physical size and *Pixel Dimensions* shows the current size of the file in pixels. The physical size can be changed here freely for printing purposes. The pixel dimensions can also be changed by ticking the *Resample Image* box, but beware – **this permanently changes your file** and should only be done on a copy. Reducing the pixel size may be desirable, e.g. for e-mailing. It is rarely necessary to upsize (or 'interpolate') photographic images because the software cannot add more detail so it 'guesses' the extra pixels and the image will just look softer. See the notes on *Image Resolution, Size and Quality* for more on this confusing subject.

5. File saving strategy

One strategy might be to use *File>Save As* to create a succession of .PSD files whilst an image is evolving (e.g. Church1.PSD, Church2.PSD, etc.). This gives you the option of going back to earlier versions in the event of a mistake or an evolutionary dead-end. When the image is finished, remove unwanted layers and archive the most complete .PSD version onto CD, DVD or external hard disk in case you want to re-work it, but also keep a flattened version on your hard disk for viewing and printing purposes. You could also use *Image>Resize>Image Size>Resample Image* to create a smaller flat file, (say) 800 × 600 pixels, and then .JPG it down to (say) 100 KB or less for screen display purposes and e-mailing. Remember that next time you re-visit *Image Size* **turn off the Resample Image button** or you will damage your file, when simply intending to re-size it for printing purposes.

6. Raw files

Many cameras can save images as 'Raw' files instead of (or as well as) JPG files. These bypass much of the in-camera processing and leave you to make decisions such as exposure and colour temperature at a later time. I would encourage beginners to avoid shooting Raw files at first, and concentrate on mastering the basics with JPGs. This is because processing Raw adds complexity and imposes major restrictions on your workflow. A correctly exposed JPG file is capable of producing a stunning print of the finest quality.

Image resolution, size and quality

Steve Brabner

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1. What is an image made from?

A visible image is made up of a grid of black or coloured dots. The more dots in an image, the more detail it can contain. Typically we see our images either as a print or on a screen. These have very different characteristics: prints use the reflection of light from dots of coloured ink on white paper, whereas screens emit light from a grid of glowing spots of colour.

Digital images are stored as files on computer disks and the dots are called *pixels*. A digital image file is just a grid of numbers, each one representing the colour of a pixel.

2. Resolution

Resolution is simply the number of dots that a print or screen displays in an inch and (not surprisingly) is measured in *dots per inch* (dpi).

Prints: the human eye can distinguish about 300 dpi, so that's the practical upper limit for prints. Although professional printers can produce 300 dpi for high quality purposes such as art reproduction, typical inkjet printers can manage about 200 dpi.

Screens: you can easily see the dots on a screen with the naked eye – typically only about 70 to 100 dpi due to mass-production limitations.

I have often read the following plea in magazines '*... please send us 300 dpi image files to ensure high quality reproduction in our magazine...*'. **This is nonsense!** If I send them an image file that is (say) 900 × 900 pixels (i.e. 810,000 pixels) then they can choose what size to print it in the magazine. If they print it 3 × 3 in then it will indeed be 300 dpi and will look excellent. However if they need to fill a page and choose to print it 9 × 9 in then it will only be 100 dpi, and it won't look good at all because the individual pixels will be large enough to become visible.

So there is a fixed relationship between file size, physical size and resolution. For a given image (file size) if the physical size gets bigger, the resolution gets smaller, and vice-versa. Higher resolution normally equates to higher quality although this depends upon the viewing distance. It's important to remember that images only have a resolution when they are reproduced. An image file cannot have a resolution – it's just a grid of numbers.

3. Technical stuff

Any colour can be produced by mixing red, green and blue. Computers use 256 shades of red + 256 shades of green + 256 shades of blue for each pixel giving a possible $256 \times 256 \times 256 = 16.7$ million colours. 256 shades can be represented by one BYTE (B) – a unit of computer storage. Consequently each pixel needs 3 bytes for the three component colours. This is a fixed relationship so, for example, a 3 Megapixel camera produces a 9 Megabyte file when it has been opened in Photoshop for editing.

In Photoshop (but not in Photoshop Elements) you can see the Red, Green and Blue components of an image in the *Channels* palette. The use of 256 shades of red, green and blue is called 8 bit colour (because one byte is made up of 8 bits) In recent years greater depths of colour (12 or 16 bit) are being increasingly supported by cameras and software. Unfortunately printers remain 8 bit, so the benefits cannot be fully realised and may be ignored by the beginner.

4. Advertised resolutions

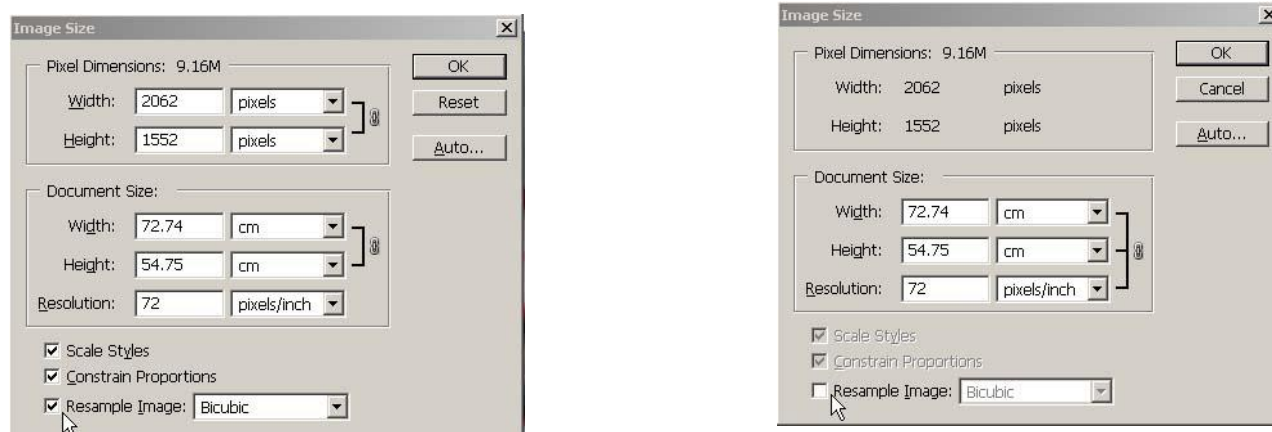
Confusingly, inkjet printers can be advertised with as much as 5,000 dpi capability. This number is often called resolution but really it's not. It should really be called 'Spots per inch'

because it's a measure of the number of spots of ink per inch that the printer can put on the paper. Many spots are used to represent each pixel in order to create a smoother effect to the eye. Above 1440 spots per inch the benefits are marginal.

Scanners are often advertised with an *optical* (or hardware) resolution and an *interpolated* (or software) resolution. Ignore the interpolated number – it may be bigger, but **it's useless hype**. Why do scanners have a higher resolution than the human eye? The answer is partly because a bigger number sells more scanners and partly because we may want to scan something small and print it large. In this case the magnification has to be taken into account. The best example of this is film scanning where the 35 mm film frame being scanned is tiny but we may want to print it very large. For this reason you should look for an optical resolution of 2400 dpi or more when buying a film scanner.

5. The most important box in Photoshop?

Image>Image Size (or *Image>Resize>Image Size* in Photoshop Elements) reveals the *Image Size* dialogue box above. It's important to fully understand this box as it is central to understanding resolution, file size and quality.



The number at the top (9.16M in these examples) is the file size and the number of pixels in the image is shown below ($2062 \times 1552 = 3,200,224$ pixels).

The *Resample Image* tick box at the bottom is critical. With this box ticked (shown left) you can change the number of pixels and the image will be permanently changed, so only do this on a copy, e.g. to make a smaller image to e-mail. With this box un-ticked (shown right), the file cannot be changed or damaged at all and you can play with the *Width*, *Height* and *Resolution*. For example, if you type 200 for the *Resolution* the *Document Size* jumps to 26×19 cm (10×7 in), which indicates the maximum size for a good quality inkjet print. If you set a smaller size the resolution will jump to more than 200 but this is not a problem – the printer will ignore any excess data.

If you now try setting the *Resolution* to 72 (typical screen resolution) and you will see that the screen size would be huge – too big to send for screen viewing purposes only, so the image would need to be re-sampled. **Remember to keep an eye on the Resample Image tick box. When it is ticked you will permanently alter your image file.**

6. Rules of thumb

When we capture a digital image using a camera or scanner we are given a choice of how many pixels to record and we need to make an intelligent decision. Capture too many pixels and we will incur unnecessary storage costs and processing delays. Capture too few pixels and we may not be able to produce high quality results at the required size.

The important thing is to capture enough data for the most demanding future need for that image file. Some approximate rules of thumb are tabled in §2.4 of the notes titled 'Photoshop Elements for Beginners'.

Photo printing

Steve Brabner

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1. Types of printer

Printing is the most demanding form of output because it is capable of resolving extremely fine detail. Flaws that were invisible on screen may be glaringly obvious in print. Consequently photographers demand the best from their printers and in recent years technology has delivered very high quality at very reasonable initial cost. The most common types of printer in use are:

- **Inkjet.** Has become synonymous with high quality photographic printing. Inkjets work by firing microscopic dots of ink onto the paper. Although the purchase price of the printers can be relatively low, special inks and papers are needed for the best quality output and these keep the per-print cost high. Only photo-quality models should be considered for the best results and these typically have 6 or more inks and resolutions of several thousands of dots per inch. Despite the marketing hype, expect to wait several minutes for a print of the highest quality. The Epson range of photo printers have given consistently good results over recent years and are probably the standard against which to compare. Models are divided into A4, A3 and A3+ paper sizes.
- **Dye sublimation.** Considered by some to produce the most 'photographic' looking continuous-tone output, dye sublimation works by melting a waxy ink ribbon onto the paper rather like early one-shot ribbon electric typewriters. Although pushed-out by inkjets, 'dye-sub' technology has made a comeback in small portable photo printers.
- **Laser.** Ideal for the rapid and inexpensive production of large quantities of text and graphics, laser printers produce poor photographic output and are not recommended for this use.

Inkjet technology is described in more detail below.

2. Inkjet paper types

Plain copy paper is only suitable for text and simple graphics and the cheapest types may shed fibres which could clog the works. Even when using an inkjet for non-photographic use, e.g. correspondence, buy packets marked as suitable for inkjets. For photos there is a bewildering array of paper from a host of vendors. Common classes of paper include:

- **Photo quality inkjet paper.** The cheapest type of photographic paper, this produces quite acceptable results for everyday use and draft printing. It can be rather flimsy.
- **Photo paper.** A compromise between price and quality for suitable printers. Has a traditional photographic paper weight and feel.
- **Premium glossy, semi-glossy and lustre Paper.** Produce the highest colour saturation and fidelity but at a high cost.
- **Matte, archival matte or heavyweight matte.** Thick papers, producing a very pleasant matt finish and dense blacks for suitable images, but the surface is fragile and easily marked.
- **Speciality papers.** Available in a vast range of types and textures including canvas effects, rag-pulp, art papers and foils.

Experimentation is the order of the day to find the right product for you. It's also acceptable to print occasionally on non-inkjet watercolour papers and other materials, although the effect may be impressionistic rather than realistic. Epson papers in Epson printers produce consistent results although at high cost. Products from reputable photographic vendors such as Permajet work equally well at less cost but there have been many reports of problems with lesser brands such as inks remaining wet hours, or even days, after printing and papers that wrinkle or display a variety of undesirable characteristics. I would recommend that you take advice, experiment, and then stick with a successful product. Most papers are single sided, so ensure that you have the right side facing the print head or you will have a very disappointing and expensive candidate for recycling.

3. Inks

Inkjet printers use either dye or pigment inks. They are not interchangeable in a given printer. Dye-based inks have historically been brighter but suffer fading from exposure to light and atmospheric pollution. Pigment inks are usually duller (although getting better) but last a lifetime

without fading, even in direct sunlight. Ink cartridges and papers from the printer manufacturer give the most consistent results for photo printing purposes. It's very tempting to buy 'compatibles' at a fraction of the cost but the results are at best inconsistent and at worst dire. Discerning photographers usually go back to the original materials despite the price. Buying in bulk on the internet can halve the high street price and lessen the impact. Lyson is one exception – they do produce photo-quality inks with an excellent reputation.

Some printers (e.g. Epson R2000) also have a 'Gloss Optimizer' cartridge which improves the finish – at a price. Others (e.g. Epson R3000) have two light black cartridges in addition to full black (and matte black), to improve monochrome printing.

4. Monochrome printing

Sending a monochrome image to a colour photo printer can give disappointing results. This is largely because the single black cartridge can only put 256 shades of grey on the paper. Compare this with 17 million colours! More radical solutions involve replacing all of the coloured ink cartridges with monochrome inks in various shades and using special software. This really requires dedicating a printer for this purpose, and has fallen out of favour since the advent of 'mono-capable' colour printers. Some inkjet colour printers (e.g. the Epson R3000) include one or two additional grey ink cartridges to produce excellent greyscale reproduction when required.

5. Colour accuracy

If you are entirely satisfied with your colour reproduction 'out of the box' it will be a happy accident rather than by design and unfortunately it won't last.

Photo printers are supplied with colour profiles which match the colour of the output to calibrated standards. It is important to follow the instructions to ensure that these are loaded correctly and activated for each print to avoid unexpected differences between screen colour and print colour. Unfortunately this is fraught with difficulty and Adobe and Epson have been particularly unhelpful over the years in explaining the maze of 'features' in this area to mere mortals and it remains a nightmare to set-up. Colour management is provided in both Photoshop and in the printer driver software. Unfortunately by default both are activated which produces poor results. It is necessary to de-activate one or the other for accurate and consistent results.

I have no idea why the implementation of colour management should be so ridiculously complicated. I have spent a lot of time understanding this subject and a proven recipe for Photoshop colour management is in my notes '*Matching colour from screen to print*'.

6. Epson hints and tips

- Inkjet printers need to be used regularly as the nozzles are vulnerable to blockages or air bubbles. Switch the printer on at least once a week and perform a Nozzle Check routine before making important prints. Perform a Head Clean if blockages are revealed. If two or three cleaning cycles does not fix the problem do not continue. Leave the printer for an hour or two before trying again. Do not keep the printer near a source of heat such as a radiator or CRT monitor.
- When not in use, switch the printer off but leave it plugged into a live socket. This enables it to remember if it has been on recently and can inhibit unnecessary head cleaning routines and ink waste.
- The roller can often be adjusted for thick paper and envelopes. Check that it is set correctly.
- Experiment with the quality and speed settings in the printer driver to save time and money. You can often use lower settings to produce identical results in a fraction of the time and ink usage.

7. Useful links

Photo quality printing is a complex topic and it can be hard to get optimum results; www.marrutt.com has some excellent tutorials on using (and abusing) Epson and Canon printers. A wide range of speciality inks and papers as well as continuous inking systems to replace individual ink cartridges are marketed by Marrutt; see also www.permajet.com and www.fotospeed.com.

Tone and colour correction using Photoshop Elements

Steve Brabner

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1. What is tonal correction?

We may use words like 'flat', 'lifeless' or 'contrasty' to describe an image that has something wrong with it. To fix the image we need to apply *tonal correction*. In fact almost all images that we open in Photoshop would benefit from some tonal adjustment, and this should be on the list of things that we check automatically whenever we open a new image.

2. Photoshop Levels

Using Photoshop without using *Levels* is like riding a bike without a saddle – it's possible, but you're guaranteed problems at a fundamental level.

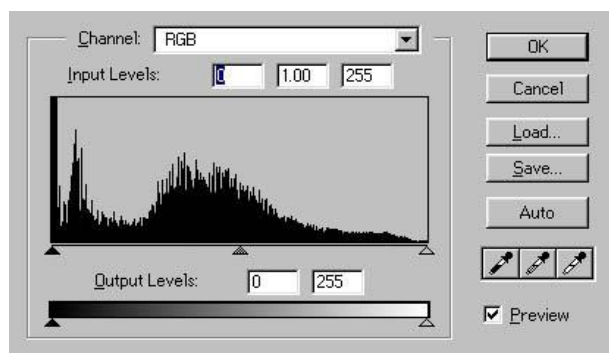
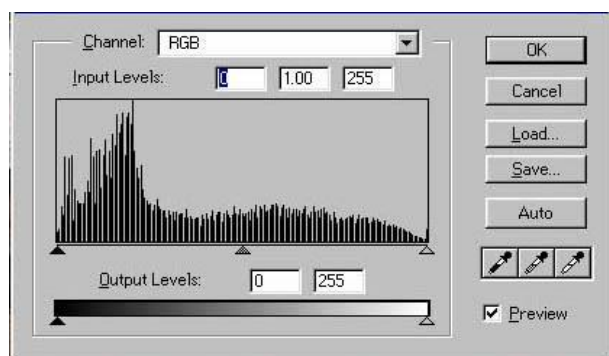
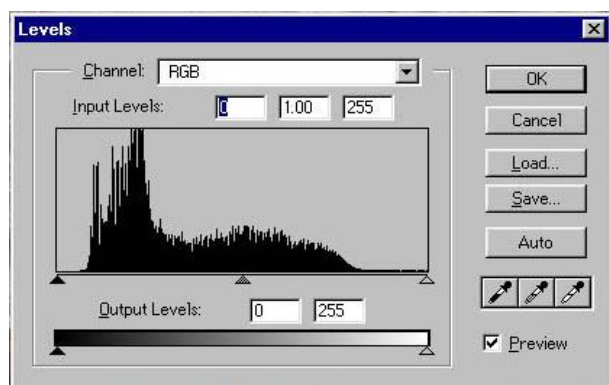


image with the opposite problem. The camera has clipped the shadows, forcing them to black. There's no cure for this – the data's gone, and a better exposure) is needed. Note that the histogram is always as high as the highest pile of pixels, so if it doesn't appear to reach the top anywhere there's probably a tall single column of pure white or pure black at one edge. The middle (grey) triangular slider enables us to change the distribution of mid-tones. For example, an image with a predominance of darker mid-tones can be improved by dragging this slider a little to the left to give more of the tonal range to the shadows.

Enhance>Adjust Lighting>Levels displays a chart (or histogram) of the number of pixels with each tone, from 0 (black) to 255 (white). Ideally, in a typical picture, all 256 levels should be used, but like in real life, you may have to make the most of what you've got. The keyboard shortcut for *Levels* is *Ctrl+L*. Shown left (top) is a typical histogram from an image with a full range of tones. Unfortunately, the gaps at both ends of the histogram confirm the lack of bright highlights and black shadows, producing a 'flat' image. If it can't be re-scanned to capture more tones, then the next-best thing is to stretch them out by dragging the black and clear triangular sliders inwards to where the histogram begins and ends. *This is important and should be checked for every image that you open*. Sometimes there will be images with no black or white content, in which case no adjustment may be necessary – but this is the exception.

Tip: hold down the *Alt* key whilst sliding the black or clear sliders to see any pixels going to pure black (0) or white (255). You can then decide whether this matters or not in your image. Crisp blacks and whites have now been produced, but the new histogram (left, middle) inevitably has gaps of missing tones caused by the stretching. If the gaps get too large, posterisation will occur, with areas of flat tone becoming visible.

The histogram (left, bottom) is of another

Beware – it's very tempting for beginners to modify an image with *Enhance>Adjust Lighting>Brightness/Contrast*, but these adjustments are effectively moving the black and white sliders without being able to see the histogram, and they usually do permanent damage to your image data. **Forget about them!**

Tip: in many dialogue boxes, depressing the *Alt* key changes the *Cancel* button into a *Reset* button, but recent versions of Photoshop Elements have a dedicated *Reset* button for *Levels*. Finally, don't forget that *Levels* can be used on selections and individual layers for localised changes.

Now that you have some idea of the tools available, you could try *Enhance>Auto Levels* and *Enhance>Auto Contrast*, which offer an automated attempt to fix tonal problems in your image. Of course, the software doesn't know what your image should look like, so there's a fair chance that they will make it worse rather than better. However, they only take a second to try and you may be surprised at the improvement. *Edit>Undo* or (*Ctrl+Z*) is always available to go back one or more steps. *Enhance>Adjust Lighting>Shadows/Highlights* improves the detail in shadow and highlight areas of the image as well as mid-tone contrast. This is a powerful feature that simplifies an area of tonal correction, although the default setting of 35% for the position of the *Lighten Shadows* slider control is usually too high.

3. Colour correction

The three eyedropper buttons in the *Levels* box allow us to select pure black, grey and white pixels in the image respectively. The most useful of these is the middle (*Set Gray Point*) eyedropper. Selecting this button and then clicking on any area of the image which should be neutral in colour will automatically adjust the entire image to make that area pure grey. Try clicking around the image and you may fix a colour cast with very little effort. Grey paving slabs, white highlights and deep black shadows are good areas to try first.

Enhance>Adjust Colour>Remove Colour Cast does the same job but just duplicates one function of the extremely powerful *Levels* dialogue box. *Enhance>Adjust Color>Adjust Color Curves* is another tool capable of adjusting highlights, mid-tones and shadows, but is more complex to master and less well implemented in Photoshop Elements than Photoshop CS. It is not an essential technique for beginners, although experts love to boast about their mastery of it, and whole books have been written on the subject!

4. Hue and saturation

The intensity and tint of colours in your image can be adjusted by means of a slider at *Enhance>Adjust Colour>Adjust Hue/Saturation*. Reducing the saturation can produce a washed-out effect, and conversely, pale colours can be boosted by increasing the saturation. As with all manipulations, an active selection will limit the effect to an area that you choose. Reducing the saturation slider to zero is one of several ways to create a black and white image from a colour original. The *Hue* slider is less useful as it is rather difficult to control but it does have one very handy feature. By selecting the *Colorize* tick-box, the image is rendered as a tinted monochrome. By adjusting the *Hue* and *Saturation* sliders, any number of attractive colour washes or traditional toning effects can be simulated, for example, sepia (brown) or selenium (blue). This is a simple and powerful effect.

5. Adjustment layers

This paper does not assume familiarity with *Layers*, and so describes the corrections of tone and colour directly on to an image. Once a basic understanding of *Layers* has been achieved, the same corrections can be applied as *Adjustment Layers*. The controls are exactly the same, but the great advantage is that they are not permanent and can be retrospectively adjusted (or deleted) at any time. It is highly recommended that tone and colour correction is always adjusted in *Adjustment Layers* when possible.

Using tools in Photoshop Elements

Steve Brabner

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The set of tools available in Photoshop are fairly similar across the more sophisticated image editing programs. If necessary, the *Toolbox* is made visible by *Window>Tools*. Each tool is accessible by a keyboard shortcut, e.g. for the *Eraser* tool press 'E'. These keyboard shortcuts are shown below, in brackets after the tool name; it's worth remembering them to save time selecting the icons with the mouse. In some cases, multiple tools are grouped together (see page 3), in which case press *Shift* + the keyboard shortcut repeatedly until the required tool appears, e.g. press *Shift+L* for each of the *Lasso*, *Polygon Lasso* and *Magnetic Lasso* tools in turn. When each tool is selected, any options available for that tool are displayed at the top or (recent versions) bottom of the screen. These notes describe the tools of most use to photographers.

The final page of these notes shows the *Toolbox* in Photoshop Elements 12 (note the last-used option in a grouped box with multiple tool options will be retained 'on top' until changed).

Marquee tool (M), Lasso tools (L), Magic Wand tool (W), and Selection Brush tools (A): the uses of these tools are described in the separate notes '*Making selections*'.

Move tool (V): this tool enables the movement of *Selections* and whole *Layers*. The useful option in the *Move* tool, *Auto Select Layer* will select and move the appropriate layer under the cursor if the image is composed of multiple components on different layers. Movement is normally achieved by dragging the mouse in the selection. For fine control, press the *Arrow* keys for single pixel movements or combine with the *Shift* key for 10-pixel movements.

Crop tool (C): once selected, the mouse can be used to drag out a rectangle. Pressing the *Return* key or clicking the tick box then crops away everything outside that rectangle. This applies to all layers and also to any parts of the image that are temporarily outside the Canvas area. All cropped data are removed permanently. Options enable the crop rectangle to be rotated (e.g. to correct a slanting horizon) and distorted.

Brush tool (B), Pencil tool (N), and Paint Bucket tool (K): these produce areas of flat colour (the '*Foreground*' colour) which are rarely appropriate to photographs. However they can have application in producing masks and borders. Only the first few brush shapes in the brush palette are likely to be useful.

Clone Stamp tool (S): if there could be only one tool in Photoshop the *Clone Stamp* tool would be it! The size and softness of the tool is adjustable, and it functions by picking up an area of a photograph and overlaying it elsewhere. The ability to remove spots and blemishes and to tidy up, or even completely remove, unwanted areas of the image is unparalleled. Before using this tool you must indicate where the sample is to be taken from by pressing the *Alt* key and clicking there. It's worth practicing with the *Clone Stamp* tool. The secret is to keep sampling different areas around the target and to avoid replicating any obvious feature. The eye is very good at spotting a repeating pattern.

Healing Brushes (J): the *Healing Brush* and *Spot Healing Brushes* tools take the *Clone Stamp* tool even further by magically blending the 'brushed' area into the surrounding image, again after specifying the area to be used for the 'healing paint' with *Alt/click*. A recent addition to the *Spot Healing Brush* is the *Content Aware* option, which sometimes produces quite large and miraculous repairs.

Red Eye tool (Y): occasionally useful for removing the red-eye effect from on-camera flash. The same thing can be achieved with the *Sponge Tool*.

Impressionist Brush (B): enables the area under the brush to be replaced by a ‘scrambled’ version of the image. You’re unlikely to find a compelling reason to use it. Beats me why Adobe includes such trivia and yet don’t include something genuinely useful like a colour management system comprehensible to humans.

Eraser tools (E): often useful for creating difficult selections or erasing holes in layers. *Magic Eraser* and *Background Eraser* try to semi-automate the identification of an edge when making selections or removing backgrounds, usually with limited success.

Gradient tool (G): most useful for generating gradients for layer masks and occasionally useful for making rainbows!

Blur, Sharpen and Smudge tools (R): provide local blurring, sharpening and smudging (really!). Occasionally useful, e.g. to soften a visible edge.

Dodge, Burn and Sponge tools: familiar concepts to darkroom workers, these useful tools provide localised contrast and saturation control in small areas, but should not be overused. Use repeatedly at low settings for best control. The *Burn* tool is useful for creating shadows when combining images. Arguably, digital workers could learn from traditional photographers and spend more time on burning and dodging detailed areas of their images.

Type tool (T): enables the addition of text to an image which can be distorted and manipulated to create some interesting effects. Ensure the *Type Mask* options are not selected.

Eyedropper tool (I): mainly useful for picking up a colour from the image to use for a complementary border, text or graphic element. Picks up a *Foreground* colour by default. Hold the *Alt* key to sample a *Background* colour (which is the colour of the *Canvas* beneath the image).

Hand tool (H): when the image is zoomed-in, selecting this tool enables the mouse to be used to pan around the image. Double-click this tool for a handy shortcut to fill the screen with the image.

Zoom tool (Z): select and click to enlarge the area of the image centred on the mouse. Hold the *Alt* key down to zoom out. Double-click this tool for a handy 100% magnification of the image, where each image pixel is visible and maps to one pixel on the screen.

Foreground and Background colours: the two small squares at the bottom of the toolbar show the current foreground and background colours. These are the colours typically used by painting and drawing tools and some filters. The colour of each can be changed by double-clicking on it and using the *Colour Picker* that appears. Alternatively, use the *Eyedropper* tool. At the top right of the two boxes is a tiny symbol to swap the two colours (X). At the bottom left is another to return to the default black and white (D).

Undo and History: when working on an image there will inevitably be times when you will need to undo work and go back to an earlier state. To undo the last action press *Ctrl+Z*. To re-do the action press *Ctrl+Y*. The *Undo History* palette (*Window>Undo History*) shows a list of recent actions, with the latest at the bottom. Clicking on an earlier action restores the image to that state. As soon as a new action is performed, all states below this point are deleted.

You can set the number of history states in *Edit>Preferences>Performance*, but beware of increasing the number from the default of 50 as computer resources will be heavily impacted. Also note that if you have 50 history states and you make 50 small brush strokes, then no previous history remains. As a fall-back you might choose to save the image file with a new name every (say) half-an-hour.

N.b. A graphics tablet extends the range and controllability of some of the tools making, for example freehand selections much easier. The pressure sensitivity feature is particularly useful for blending edges or delicate painting effects with the *Selection Brush*.

The image below is © 2013 Adobe Systems Incorporated.

Toolbox overview

A View tools

- Zoom (Z)
- Hand (H)

B Select tools

- Move (V)
- Rectangular Marquee (M)
- Elliptical Marquee (M)
- Lasso (L)
- Magnetic Lasso (L)
- Polygonal Lasso (L)
- Quick Selection (A)
- Magic Wand (W)
- Selection Brush (A)

C Enhance tools

- Red Eye Removal (Y)
- Spot Healing Brush (J)
- Healing Brush (J)
- Smart Brush (F)
- Detail Smart Brush (F)
- Clone Stamp (S)
- Pattern Stamp (S)
- Blur (R)
- Sharpen (R)
- Smudge (R)
- Sponge (O)
- Dodge (O)
- Burn (O)

D Draw tools

- Brush (B)
- Impressionist Brush (B)
- Color Replacement (B)
- Eraser (E)
- Background Eraser (E)
- Magic Eraser (E)
- Paint Bucket (K)
- Eyedropper (I)
- Gradient (G)
- Pencil (N)

E Shape tools

- Rectangle (U)
- Rounded Rectangle (U)
- Ellipse (U)
- Polygon (U)
- Line (U)
- Custom Shape (U)

F Type tools

- Horizontal Type (T)
- Vertical Type (T)
- Horizontal Type Mask (T)
- Vertical Type Mask (T)

G Modify tools

- Crop (C)
- Cookie Cutter (Q)
- Straighten (P)
- Recompose (C+C)

■ Indicates default tool * Keyboard shortcuts appear in parenthesis

Making selections in Photoshop Elements

Steve Brabner

January 2014

The computer has no idea which area of an image is a sky or a tree. If we want to modify such elements we can tell the computer by making a *Selection*. Selecting areas of an image is one of the most fundamental and important skills in digital imaging. Tools are provided in Photoshop to help make selections but there is almost always an element of human skill and judgement too. Once a selection has been made, most Photoshop actions will be limited to the area enclosed by the selection only. Note that we can alter images without selections using brush-based tools, but mastering selections opens up the full power available from Photoshop in comparison to simpler programs such as Adobe Lightroom.

Lasso tool (L)

This tool allows a selection to be drawn (rather like a pencil line) around an area of the image. A variation of the tool (*Polygonal Lasso*) allows the selection of points which are joined by a straight line, like a rubber band. A *Magnetic Lasso* tool tries to find an edge automatically for you - often with limited success.

Application: don't try to draw accurately around an object with the Lasso tool – beginners may do this for a while before finding better methods! The Lasso tool is best for creating rough shapes. It is especially good for quickly tidying up rough selections by lassoing unwanted areas to delete. The Polygon Lasso tool can sometimes be useful for selecting shapes with straight sides.

Magic Wand (W)

This tool selects areas based on similar colour. As a default, it selects pixels that are next to one another, e.g. one red flower head. However, if the *Contiguous* option is switched off it will select all the red flowers in the picture ... but also anything else with a similar red.

Application: can be very useful given a suitable subject such as a blue sky or a red flower. Adjust the Tolerance control carefully until you get as close as possible to the selection you need.

Selection Brush (A)

This enables you to use a brush to paint over the area that you want to select and then turn it into a selection. Much easier to use and control than the *Lasso Tool*, but slower. Difficult to create long straight lines or smooth curves.

Application: good for tidying up selections already made with other tools. By default the Selection Brush creates a selection but with the Alt key pressed it will subtract from the selection too. A tool option switches between painting the selection directly (marching ants) or painting a translucent red mask which can be turned into a selection later. I like to create a selection with another tool but then zoom in close and tidy up the edges with the Selection Brush. Always use a soft-edged brush on photographs or the result will look artificial.

Marquee tool (M)

This simply selects rectangles or ovals.

Application: very quick and useful for casual cropping of areas of a picture. The circle makes a good artificial sun! Hold the Shift key down to constrain a rectangle to a square or an oval to a circle. The Crop Tool (C) is a version of the rectangular marquee tool specifically for cropping the image to a smaller area.

Quick Selection tool (A)

A relatively new arrival, this tool is an excellent combination of automatic and manual selection creation. *Application: good for any area that is reasonably defined by colour or tone. Having arrived at an approximate selection automatically, the edge can be pushed in or out manually whilst holding down the mouse button.*

My favourite method

I sometimes want to isolate a photographic element (such as a sky) so that I can move it, or use it in another image. If the automated selection tools above don't produce a good result, I usually make a very rough selection with the *Lasso* tool and then cut and paste this on to a new layer. With all the other layers switched off, I then nibble away at the edge with the eraser using a small soft-edged brush. Working on a small section at a time, I can restore each section as I go along with the *Undo* command if I'm not happy with it. Using recent versions of Photoshop Elements, this procedure has largely been replaced by the *Quick Selection* tool.

Adding and subtracting selections

A complex selection is rarely made on one step. It is often built up in a number of stages. You can add to a selection, or subtract from a selection. For example, the best results with the *Magic Wand* tool are often achieved by adding several selections together, using a low *Tolerance* value (press *Shift* to add and *Alt* to subtract). You will often find that in addition to selecting the pixels that you want, tools such as the *Magic Wand* will also select other unwanted areas. These can be quickly subtracted by drawing around them with the *Lasso* tool whilst pressing the *Alt* key.

Selections can also be modified with a variety of menu commands under the *Select>Modify* menu. These include the ability to expand or contract the selection by a given number of pixels. Other features attempt to automatically increase an initial selection to include similar adjacent pixels (*Select>Grow*) or similar pixels throughout the image (*Select>Similar*). These can sometimes improve a selection and may be worth a try with a difficult subject.

Forcing a selection

Often, the part of the picture that you want to select does not stand out clearly from the rest, so automatic tools such as the *Magic Wand* won't work very well. Before you spend ages creating a manual selection, try increasing the contrast or saturation to see if this will 'force apart' the edge that you are trying to select. Work on a copy of the image so that if you destroy the image in the process of getting a selection you can always revert to the original (having saved the selection first).

Saving selections

Selections can, and should, be saved (*Select>Save Selection*) if they have taken more than a minute or two to create. They take up little disk space and are saved along with the image in a .PSD file.

Edges

The accuracy and quality of the edges of your selections will determine whether they look realistic or not. Always check the results by zooming in close. Nothing in photography is pin sharp so you should normally feather selections (*Select>Feather*) by one or two pixels so that they blend in naturally. Don't forget that you can also feather a selection by a huge amount to create a gradient, e.g. to create recession by gradually rendering the background out of focus.

So-called 'marching ants' indicate the edges of a selection on-screen. Be aware that these do not necessarily show all selected pixels. It's easy to forget that selections are actually of variable density, i.e. a pixel could be 100% selected or it might only be 5% selected. The marching ants only display around pixels that are 50% or more selected, and also may not show small selected areas when zoomed right out.

Using layers in Photoshop Elements

Steve Brabner

April 2016

1. Layer principles

Layers can be created automatically (eg with *Edit>Paste*). As a result, beginners who perhaps do not even have the Layers palette open, can become confused. Layers cannot be ignored and they are incredibly useful, so it's essential to become familiar with them.

Layers can be thought of as a stack of prints and transparent sheets viewed from above. After opening the Layers palette (*Window>Layers*), a new transparent layer can be created by clicking on the *Create a new layer* icon in the Layers palette (a blank page icon), or select *Layer>New>Layer*. Transparency is indicated by a chequer board pattern. Clicking on the *Eye* icon at the left of each layer in the palette makes it visible or invisible. The tools and effects can only be applied to one layer at a time: the *Active Layer*. Clicking on a layer in the palette makes it active and highlights it. Important: visible layers and Active layers are independent of one another, which can be confusing initially.

An example of the use of layers would be to move an object within an image; select the object in the Background layer (e.g. using the *Quick Selection* tool) then *Layer>New>Layer via Copy* puts it into a new layer. Using the *Move* tool, it can now be dragged into a new position in the image. Click on the original Background layer again and the *Clone Stamp* tool can be used to erase the object from its original position.

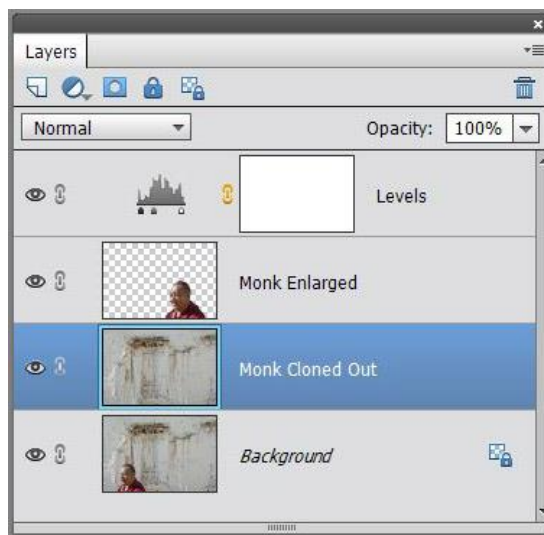
The position of a layer in the stack can be changed by clicking and dragging it up or down the palette, and a layer can be deleted by dragging it to the *Dustbin* icon at the top of the palette. Unlike a stack of prints & acetate sheets, the active layer can also be made partially transparent with the *Opacity* slider or can be combined in amazing ways with the Blending Modes (by default shown as *Normal* at the top of the palette). Although layers can merged or totally flattened I always keep all the layers of any significant image to enable future re-editing. The Photoshop file format (.PSD) keeps all the layers but other formats such as .JPG cannot support layers and the image will be flattened automatically when, saved.

That's the basics covered already, but here are some other things that you should know about layers...

2. Background layers

When a new image is opened it is automatically placed in a layer named *Background* below which is *Canvas* (not shown in the palette). The Background layer has some special properties:

- the image that it contains cannot be moved around (see a padlock symbol in the layer). To move it, make a copy first
- it cannot be moved from the bottom of the stack to a higher position
- it cannot be transparent - any holes show the *Canvas* which is the Background Colour
- any Canvas added to enlarge the image area is applied to the Background layer only
- if the Background layer has been deleted, a new one can be created (eg to show the Canvas) with *Layer>New>Layer from Background*.



3. Duplicating layers

Layers can be duplicated by dragging them on to the *Create a new layer* icon within the Layers palette (or *right-click>Duplicate*). Before making a significant change to an image (e.g. Cloning) it's a good idea to make a duplicate layer and use that. If it goes badly you can delete the layer and start again.

It's a good habit to re-name layers as you create them to avoid confusion over what they contain. *Double-click* the name of the layer to re-name it.

4. Combining or linking layers

Image files can get very large and each layer contributes to this, so it's a good idea to delete or merge any layers that are no longer needed:

- *Layer>Merge Visible* will permanently combine all layers that are currently visible
- *Layer>Merge Down* merges the Active layer with the one below, or
- *Layer>Flatten Image* combines all layers in the image and discards those that are not visible.

There is no necessity to flatten layers and they will be retained in a .PSD file for future use. The image does not need to be flattened to print it. Once merged, layers can only be separated again for as long as they remain in the History palette.

Layers may be linked together by selecting multiple layers (*Ctrl-click* or *Shift-click* each) then selecting the *Link Layers* icon (a chain symbol). Movement of any one layer will also move the other linked layers and the chain symbol is shown in each Linked layer as a reminder.

5. Adjustment layers

Adjustments such as Levels, Saturation or Color do not have to be made permanently to an image. It's much more flexible to use *Adjustment Layers* which can be altered later. These are created by *Layer>New Adjustment Layer* (or the *Create new fill or adjustment layer* icon in the Layers palette). To alter the settings later, click on the Adjustment layer thumbnail where you will see the sliders in their adjusted positions.

Tip: Adjustment layers normally affect all visible layers below, but can be set to only affect the one layer immediately below by using *Layer<Create Clipping Mask*.

6. Don't ignore layers

Although the basic concepts of layers are not complex, beginners will find them confusing. The key is to think about the 'stack of prints and acetate sheets' model in your head and think logically about how you would achieve the required result with them.

The fact that the visible layers and the Active layer can be different is the second hurdle to overcome. Recent versions of Photoshop have tried to help with this by, for example, not allowing you to manipulate a layer that you can't see. Keep the Layers palette open at all times and with practice, layers will become second nature and reward you with much greater flexibility in your image processing.

Advanced Layer Capabilities

7. Blending options

Blending is the process by which the Active layer is combined with the visible layers below it in the stack. The default setting is *Normal* (at the top of the Layers palette), where no blending occurs. However, many other wonderful and creative options exist in the drop-down menu. For example *Screen* produces a combination akin to two projectors on a screen and *Lighten* only shows those areas in the upper layer which are lighter than the corresponding areas in the lower layer. These can create wondrous creative opportunities and are worthy of some time to explore.

8. Shortcuts

Throughout Photoshop, there are useful keyboard shortcuts and a few are worth remembering:

- *Control-Click* a thumbnail in the Layers palette to turn it into a selection.
- *Alt-Click* on the *Eye* icon to make just that one layer visible and repeat to make all the previous layers visible once more.

There is also a too-small menu in the top right hand corner of the Layers palette which offers handy shortcuts or *Right-click* a layer in the Layers palette to reveal many useful commands.

9. Combining layers from different images

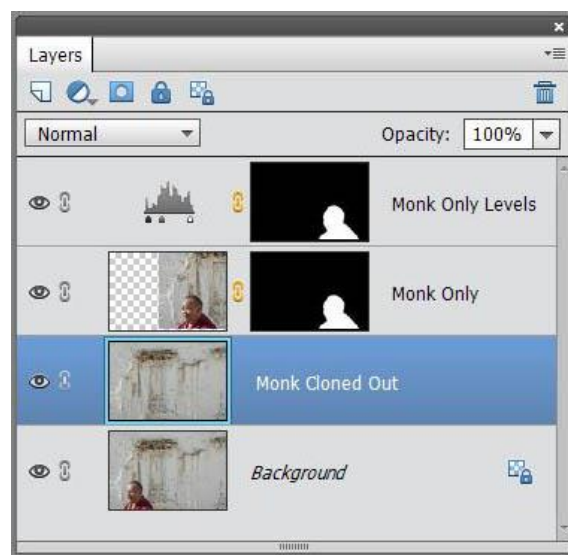
You may want to combine images from more than one exposure in a single Photoshop file (e.g. to replace a sky). Achieving this is not as intuitive as it might be; open the donor image and make the required layer active. *Select>All* then *Edit>Copy*. Now open the recipient image and select *Edit>Paste*. Another way to achieve this is to drag and drop the donor thumbnail from the Photo Bin onto the recipient image.

10. Adjustment layer masks

After getting to grips with layers, an understanding of *Layer Masks* will bring great rewards in terms of editing flexibility and reversibility. When you make a selection and apply an adjustment to it (eg *Enhance>Adjust Lighting>Levels*), the adjustment only applies to the selected area. This is baked-into the edit and can only be changed whilst still in the History palette.

Using an *Adjustment Layer* on a selection instead (*Layer>New Adjustment Layer>Levels*), achieves the same result but the adjustment values can be re-visited forever and the selection area can also be changed. This is achieved by an *Adjustment Layer Mask* which is represented by the greyscale thumbnail alongside the image thumbnail in the layers palette. Where it is black, the corresponding area of the image is not affected by the adjustment. Where it is white it is fully affected. Where it is 50% grey, it is 50% affected etc. The *Layer Mask* is, in all other respects, a regular greyscale layer and the full tool set works on it; Paintbrush, selections, filters etc. To operate on the mask instead of the image thumbnail, click on it and ensure that there is a box around it.

Extremely feathered selections are commonly used in this way to create soft-edged masks to add contrast, lighten or darken many areas of an image. Each can be re-visited and adjusted freely.



11. Image layer masks

A Layer Mask can also be applied to an image layer; *Layer>Layer Mask>Reveal All* (or *Hide All*). There is also an *Add Layer Mask* icon in the Layer palette. Click on the Layer Mask to make it active and paint with black or white within the image to hide or reveal it.

A selection in an image layer can be turned into a Layer Mask with *Layer>Layer Mask>Reveal Selection* (or *Hide Selection*) and so showing (or hiding) only that part of the image within the marching ants.

When combining images, masks can be used to determine the required areas from each and these can be adjusted at will. The image layer and its mask are normally locked together and can be moved as a pair.

Another useful tool for combining two images along a line (eg a horizon) is the Gradient tool. With black and white as the foreground and background colours, choose the Gradient tool and set it for a Foreground to Background, Linear Gradient. Click on the mask for the upper layer and then click and drag in the image. This will create a black to white gradient which hides the upper image along the line of the gradient. If the wrong half is revealed, drag again in the opposite direction. If the edge is too sharp, drag a longer gradient. If the position is wrong, drag repeatedly until it is exactly where you want it. Tip; to add a second gradient to an existing one (eg black to white to black), add a Foreground (or Background) to Transparent Gradient.

12. Layer mask shortcuts

- *Shift-click* on a mask to hide it, or repeat to reveal it again.
- *Alt-click* on a mask to show the actual mask itself on screen. Repeat to hide it again.
- *Control-click* on a mask to make a selection from it.
- *Right-click* on a mask for other options.
- *Alt+drag & drop* to copy a mask from one layer to another.

Masks are just greyscale images so they can be edited in the same way; with black, white or grey brushes, Blur tool etc. A mask with a sharp edge could be softened with a Blur filter.

Filters and sharpening using Photoshop Elements

Steve Brabner

January 2014

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.

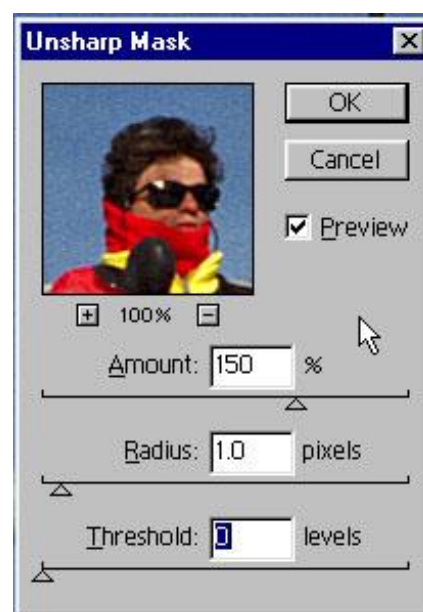
2. Applying filters

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.