

BIPC DIGITAL IMAGING STUDY GROUP  
ASSIGNMENT 2001-11  
SUBJECT: WHERE TO EDIT SCANNED IMAGES

**PROBLEM:** Assuming that one has a scanner and Adobe Photoshop and that one wants to enhance/manipulate the scanned image, one has to decide whether to enhance the image using the scanner software or using the Adobe Photoshop software and whether or not to use adjustment layers if the image is enhanced in the Adobe Photoshop software.

**CONCEPT:** The decision of where and how to enhance the software hinges on three factors:

- Can the scanner produce images with a bit depth of greater than 8 bits (per channel)?
- Is the scanner software TWAIN enabled?
- What is the quality of the enhancement software with the scanner?

If the image is only 8 bit in color depth then it is a good procedure to use adjustment layers in Photoshop.

**PROCEDURE:** Several cases are to be considered. In the first case assume a scanner with 12 bit color depth, weak enhancement features in the scanner software and scanner software that is TWAIN enabled. In this case open the scanner software from within Photoshop and File|Import from the scanner the image in whatever image scanning resolution is desired. During the import process, the scanner software can be used to crop those portions of the image that will never be used again. Then save the image in Photoshop in \*.psd format as the initial raw image. This image will be the basis for further processing. You will be in the "16 bit mode" at this point and will not have all the Photoshop tools at your disposal, for example the Magic Wand tool is not available. You can later change the mode to 8 bit and use the additional tools that were not available in the higher bit mode. Remaining in the higher bit mode for as long as you can while enhancing the image avoids the creation of the austere comb-like histogram. With higher bit depth the histogram retains a much fuller spectrum of information as color correction proceeds.

In the second case if your scanner creates only 8 bit color depth, then you can process using either the scanner software or Photoshop depending upon which software is the more powerful. Photoshop most likely...

In the third case if you can not or will not use the TWAIN features of the scanning software and will bring over only an 8 bit color depth image to Photoshop, and if you have good scanning software and a scanner that processes in greater than 8 bit color depth, then you must image enhance using the scanner software. If you do not take advantage of the scanner software while in greater than 8 bit color depth to image enhance, and instead image enhance in Photoshop you are creating histograms with severe gaps and therefore losing information unnecessarily.

**ASSIGNMENT:** Pretend that you are operating as in the third case above and processes an image. Then take the same raw image and TWAIN import it to Photoshop and process it in the same fashion while in the 16 bit mode. Then change modes to 8 bit and compare the histograms and the images from both methods. Summarize the differences.

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