GREYSCALE CONVERSION

BASIC GREYSCALE CONVERSION

The worst way to create black & white photographs with a digital camera is to set the camera to B&W mode. The next worst technique is to use the Photoshop 'Convert to Grayscale' method. In both cases, the overall color in the picture is converted to luminance. The chromance is simply thrown away! There is no creative control in either of these strategies and they should be avoided.

CHANNELS

Each Color Mode, RGB, CMYK, and LAB, is made up of component Channels. Channels are black and white images that indicate the intensity of the individual 'colors' that make up the final picture, i.e. how much red, green or blue for any pixel on a screen or how much cyan, magenta or yellow ink in a dot on a printed page. A full color image is rendered when the component colors are mixed according to these channel intensities. This works exactly like color film, which is made up of three layers of emulsion, RGB for color slides and CMY for color negatives (additive and subtractive color).

In LAB mode there are three channels, Luminance, Color A, and Color B. It is possible to convert an RGB picture to LAB mode and delete the two color channels, leaving only the luminance channel. This looks better than convert to greyscale, but still gives you no control over the result. Any time you convert a picture from one mode to another, some information is lost.

Channels can be viewed with the Channels palette. **WINDOW> SHOW CHANNELS**. Use the small 'eyeball' icon on the left of each channel to make it visible or hidden.

FILM & FILTERS

When shooting with back & white film it is possible to alter the tonality of the shot with color filters that are attached to the front of the camera lens. If for example you are shooting a picture of a red apple and a green pear, using a red filter would make the apple appear lighter and the pear darker. Using a green filter would work the opposite way, making the green pear appear lighter and the apple darker. With these tools it is possible to radically alter the look of the photograph from its appearance in color. This technique can be approximated by using either the Channel Mixer or with Layer Opacity as described below.

Remember, as an artistic photographer you have no obligation to represent the real world as it really appears. You only need concern yourself with making the most interesting photograph possible. Sometimes this means twisting the truth.

CHANNEL MIXER

It is possible to re-mix or change the balance between the individual channels of a picture using the Channel Mixer. The results of this mix can also be sent to a single 'greyscale' channel, rendering a black & white image with far more control than what is available using Convert to Greyscale or the LAB mode luminance channel.

When making color prints with a color enlarger, you are essentially balancing the mix between the individual colors by adjusting the color of the light in the enlarger head.

To use the Channel Mixer, open a picture, and an Adjustment Layer> Channel Mixer. Click on the Monochrome checkbox in the bottom left of the dialog box. Then play with the three sliders until you have something that you like. Theoretically, the level of all three channels should, add up to 100%. There is a 'Constant' slider that can be used as well.

GREYSCALE CONVERSION, cont'd

PREVIEWING CHANNELS

It is worth looking at the individual channels in RGB mode and CMYK mode before deciding which individual channels will work best for any individual pictures. Every picture will be different, depending on the content and lighting.

Splitting Channels

The best way to view all the channels in separate windows is to use the split channels command. **CHANNELS PALETTE> SPLIT CHANNELS.** This will generate three or four separate new picture files, one for each channel. Each will be a black & white image. These can then be positioned next to each other on the screen and compared.

Pictures coming in from a digital camera will be in RGB mode by default. It is suggested that a second copy of same picture file be opened, converted to CMYK, and then split into its constituent channels as well. This will give you seven black & white pictures – R, G, B, C, M, Y, and K. Examine all of these to see which appear to be the most visually interesting. It is possible to combine several of these to make even more interesting tonal images. If another copy of the picture is opened and converted to LAB mode, the color channels can be deleted and you will have an eighth variation – L.

COMBINING CHANNELS

The channels from the RGB, CMYK or LAB picture files can be regrouped into a single picture, or the split channel pictures can be stacked as layers. Which strategy you employ depends on which method you prefer – the Channel Mixer or Adjusting Layer Opacity.

Replacing Channels

Sometimes it is only necessary to replace one channel with something else, e.g. paste the yellow channel into the green channel and then remix. It doesn't matter what channel data goes into which other channel, because the color of the channel will not be considered. It is all being combined into black & white.

Copying Channels

Individual channels from either the RGB, CMYK or LAB files can be copied and pasted into channels of a new empty picture file of the same size and resolution as the originals. The Channel Mixer can then be used to mix these into a new black & white image. The Channel Mixer will only process the RGB or CMYK channels, so the new picture data needs to be copied into these channels. You may want to replace the red channel with the magenta, or the green with the yellow, or the blue with the cyan, but this is not necessary to change all. Find the three best looking channels and use them.

Copying Layers

Layers from each of the Split Channel pictures can be copied into layers of a new empty picture file of the same size and resolution as the originals. Each split channel picture will contain only one layer. Simply select that layer and drag it into the new picture. A new layer will be created in the new picture for each dragged layer. The Layers will simply be numbered sequentially, so they should probably be renamed to match the source channel, so you know what you have done when you return to this image in the future.

An advantage of the Layers strategy is that adjustment layers such as curves can be applied to individual layers to further enhance the dynamic range of the final image.

GREYSCALE CONVERSION WORKFLOW

BASIC WORKFLOW

Preview
Examine the content of all possible channels to see how the tonal range varies.

open a picture file
split the channels into RGB
or at least examine them separately to find the best
open a copy of the same file
convert to CMYK mode
split the channels into CMYK
or at least examine them separately to find the best
open another copy of the same file
convert to LAB mode
delete the two color channels

Channel Strategy
Use the Channel Mixer to combine the most interesting or dynamic channels available.

create a new picture
use RGB mode if you wish to mix 3 channels
use CMYK mode if you wish to mix 4 channels
copy channels from individual pictures into channels of the new picture
adjust the balance of these channels using the Channel Mixer
send the results into the black channel

Layer Strategy
Use multiple Layers to blend the most interesting or dynamic channels available.

create a new picture
copy desirable layers
from the individual pictures into layers of a new picture
adjust the balance of these layers
with the opacity slider in the layers palette