

HISTOGRAM
and
ADJUSTMENT LAYERS

HISTOGRAM



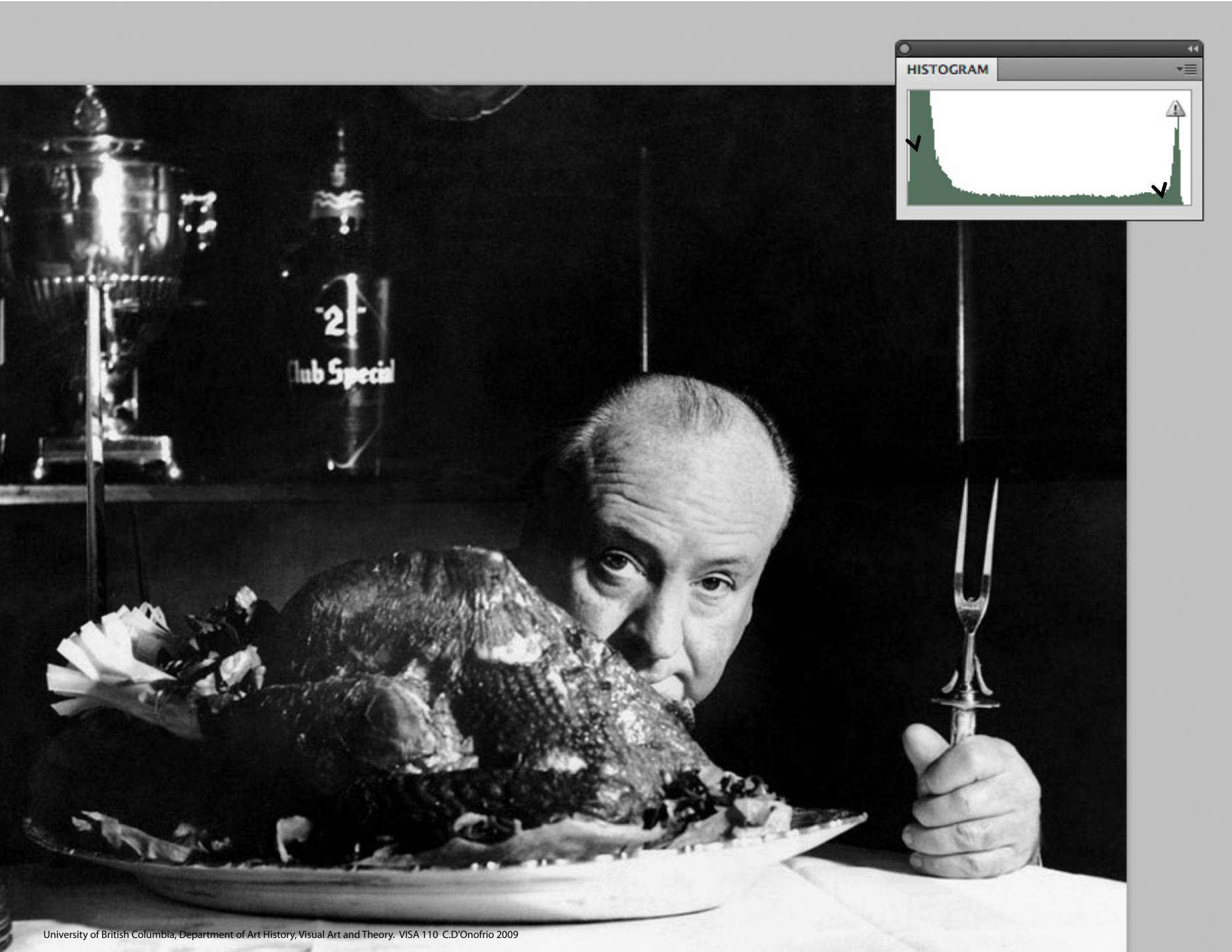
HISTOGRAM

A Histogram is a simple bar chart that shows the distribution of colour or tone from 0 to 255 (256 variations in all, which –if you remember– is the number of variations of 8 bits).

So if you were to take every pixel out of its order as an image, and instead pile them up into the order of their value (from blacks to dark grays to medium grays to light grays, lighter grays to whites, etc) you would have a histogram.

Knowing how to read histograms is quite valuable in taking a picture and understanding the make-up of a picture. As a general rule, most pictures have piles in both white and black, and a good spread everywhere else. If there are more pixels in the darker half it usually means a dark picture as well as if there are more in the lighter half that usually means a very bright picture. Generally, if the piles are at one end there tends to be not much contrast in the image. The more tiny pixels of different information for the viewer to read, the better.

For example, this histogram shows that there are quite a lot of dark blacks, as well as a pile of whites and very little different grays in between, therefore it is quite a high contrast image.

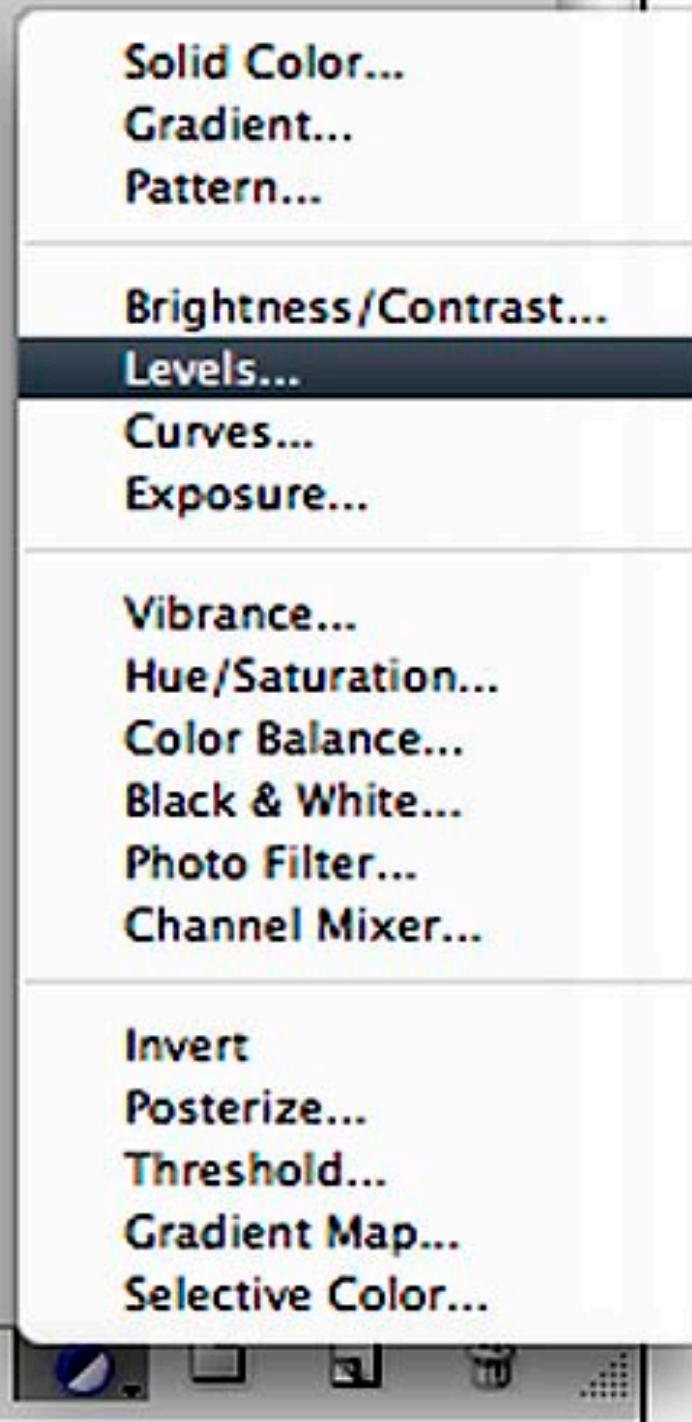


HISTOGRAM

ADJUSTMENT LAYERS

There are MANY benefits to using Adjustment Layers:

1. You can always change your mind and change the adjustments you made without damaging original pixel information. This is because Adjustment Layers are a mathematical separate layers on top of your pixel information that does not actually hurt the actual pixels of your original file. This means you can always change your edits, quite convenient when monitors display differently or printers print differently. It is never too late with an adjustment layer.
2. They are smaller than having multiple layers of duplicated pixel (image) information, so easier to work with.
3. By clicking on your eyeball to make an adjustment layer visible or invisible you can do instant before and after. You can also have many adjustment layers and have alternative edits to choose from.
4. You can use the "Opacity" slider on the specific adjustment layer to control the strength of your edits, very flexible.
5. You can duplicate your adjustment layers onto other images, multiple images, images in other documents, etc.
6. You can make edits to select parts of your image, lots of control.
7. Crazy! You can use blending modes to build density in highlight areas, or open up shadows in dark areas etc.

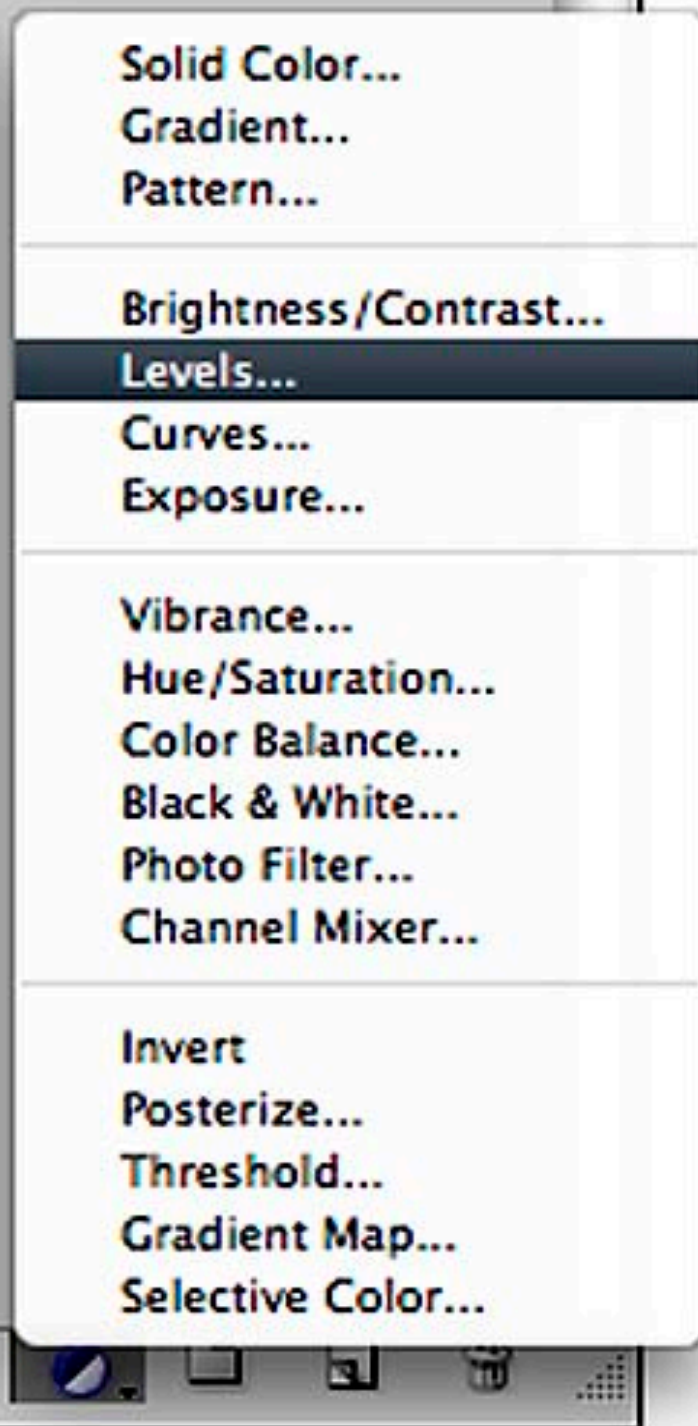


They are very easy to use, all you have to do is go to your Layers Palette and click on the half black half white circle on the bottom and a choice of what kind of adjustment layer you would like to use will come up.

We are going to stick to basic density correcting, there are Four Adjustment Layer selections that all control density correcting. They are grouped together in "Brightness/Contrast", "Levels", "Curves" and "Exposure". We are going to be using "Levels".

Why Levels? Well because "Brightness/Contrast" or "Exposure" are a bit abrasive to the image and does not control the redistribution of the histogram as well as it could. It is the easier way to adjust and to some extent the amateur way to do things. Curves are a bit more difficult, and the changes it makes are drastic, but learning Levels will help you to understand Curves in the near future.

Levels is a relatively easy and professional way to adjust image density, gives you quite a lot of control and re-distributes the histogram in a smart way. Also, Levels are "all-in-one" in that with one adjustment layer you can density and colour correct, making life easier!



ADJUSTMENT LAYERS *LEVELS*

*for density correction



HISTOGRAM

LAYERS

Normal Opacity: 100%

Lock: [Icons] Fill: 100%

Penn's Dylan

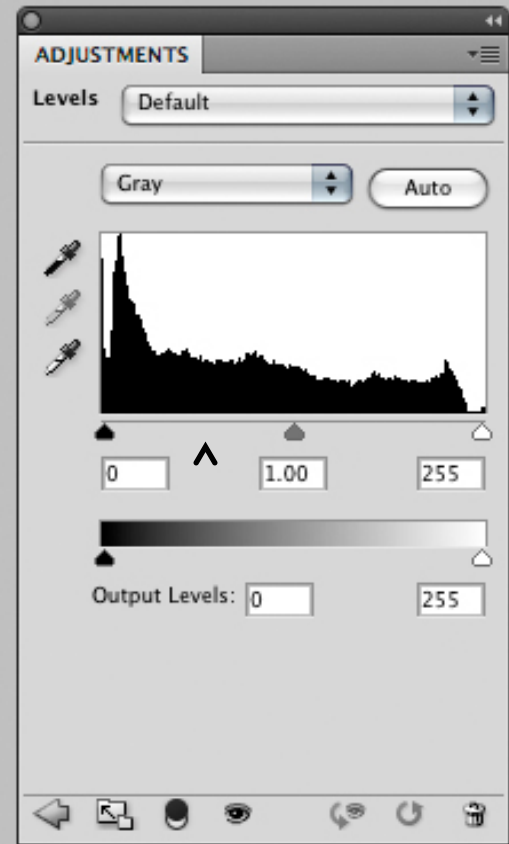
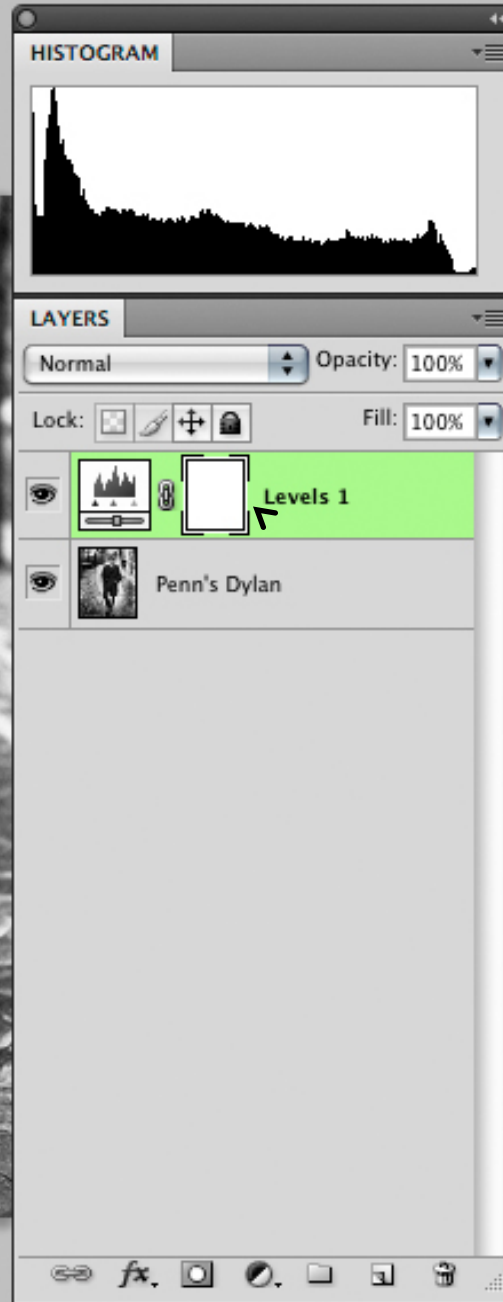
- Solid Color...
- Gradient...
- Pattern...
- Brightness/Contrast...
- Levels...
- Curves...
- Exposure...
- Vibrance...
- Hue/Saturation...
- Color Balance...
- Black & White...
- Photo Filter...
- Channel Mixer...
- Invert
- Posterize...
- Threshold...
- Gradient Map...
- Selective Color...

Create new fill or adjustment layer

This image has quite a few dark areas and a range of mid to light gray areas, there is not much pure white so perhaps we can adjust this this so that there are.

All you would need to do is adjust the histogram using an adjustment layer. You can create one in your layer palette by clicking on the half white half black circle icon.

ADJUSTMENT LAYERS



Once a Levels Adjustment Layer is made it creates a layer with an icon of a miniature Histogram. It also brings up a dialogue box that allows you to make the necessary changes to your histogram to change the density levels.



HISTOGRAM

LAYERS

Normal Opacity: 100%

Lock: Fill: 100%

Levels 1

Penn's Dylan

ADJUSTMENTS

Levels Custom

Gray Auto

0 1.00 238

Output Levels: 0 255

This arrow controls the lighter pixels in this image. If we slide it to the left you will see that it makes the white areas even whiter because it is changing the pure white pixel information from not just being pixel 255, but instead 238-255 are now all pure white. The same would work if you slide the black arrow to the right.



HISTOGRAM

LAYERS

Normal Opacity: 100%

Lock: Fill: 100%

Levels 1

Penn's Dylan

ADJUSTMENTS

Levels Custom

Gray Auto

0 0.55 255

Output Levels: 0 255

This arrow controls the mid-point gray, you can adjust this to have more pixel information from the black to mid-point gray, (slide the arrow to the right) which would make it a darker image. Or you can slide the mid-point gray area to the left. This would mean that there is more pixel information and variation in the lighter gray areas--resulting in a lighter image.



HISTOGRAM

LAYERS

Normal Opacity: 100%

Lock: [] [] [] [] Fill: 100%

Levels 1

Penn's Dylan

[fx] [] [] [] [] [] [] []

ADJUSTMENTS

Levels Custom

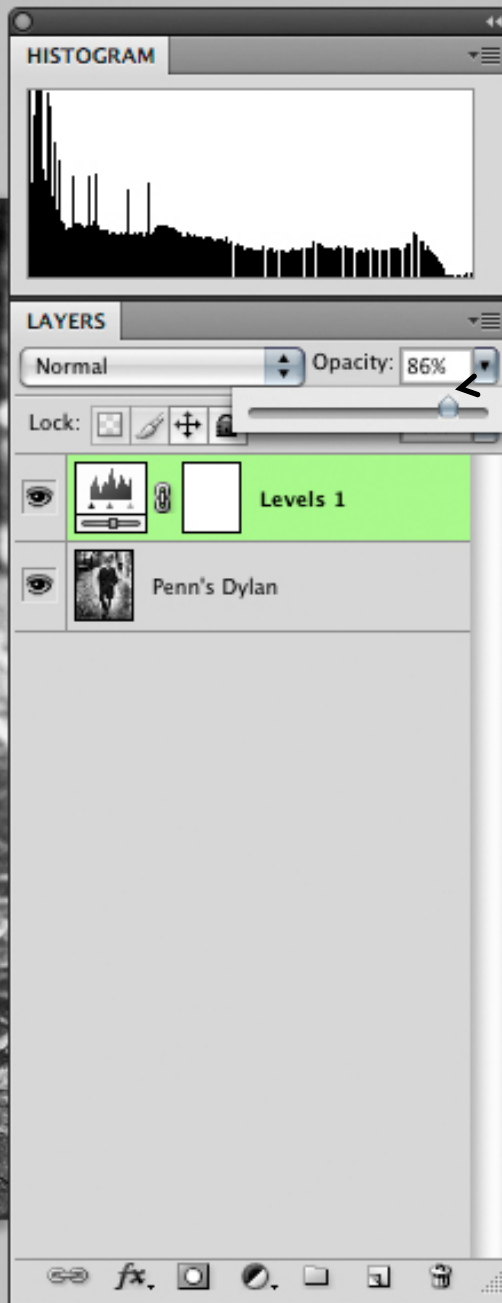
Gray Auto

0 0.75 255

Output Levels: 0 255

[] [] [] [] [] [] [] []

This is how you adjust your density (or lights and darks / brightness and shadows) of an image. If you are not happy with your changes at any point, just simply double click on the Levels icon and it will bring up your dialogue box for re-adjusting, with NO damage to your original pixels!



If you feel your adjustments are too strong, just select the layer and change the layers opacity. You can do this at any time, you can even click on the eyeball to make the layer momentarily transparent to see the changes you have made.

ADJUSTMENT LAYERS *LEVELS*

*for colour correction

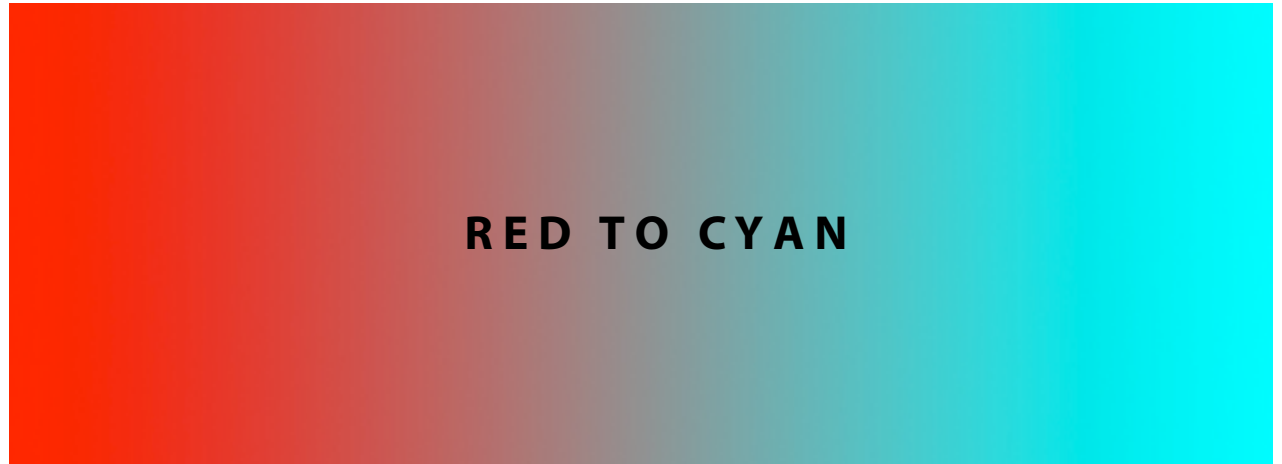
CHANNELS

Remember
Channels?
(from part I)

What Colour images are, is pretty much three Histograms piled on top of each other.

So adjusting colour with histogram levels is kind of the same.

One histogram is a gradient from Red, to Gray, to Cyan. The other is Green to Gray to Magenta and the last one is Blue to Gray to Yellow.

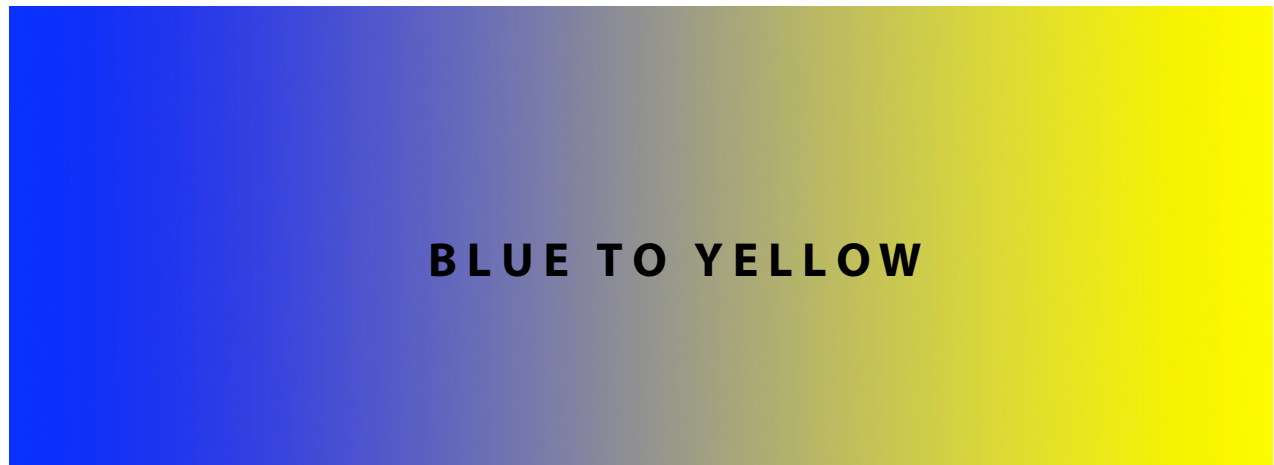
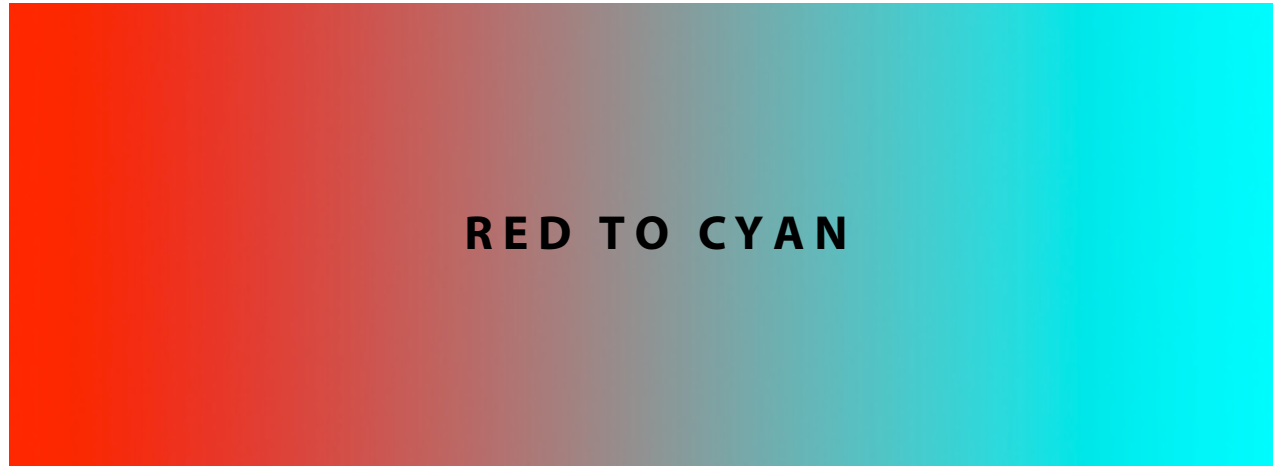


CHANNELS

Therefore, if your image has a green colour cast to it, select your Green Channel and adjust the histogram until it looks neutral.

(Remember, all 6 hues are represented by their opposite, so if you have a Yellow colour cast just go to the Blue Channel to adjust it).

Let's try it!



COLOUR CORRECTING

This image was photographed with daylight film in a tungsten light setting. This results in yellow-greenish cast. To adjust this, start by opening a **Levels Adjustment Layer**.

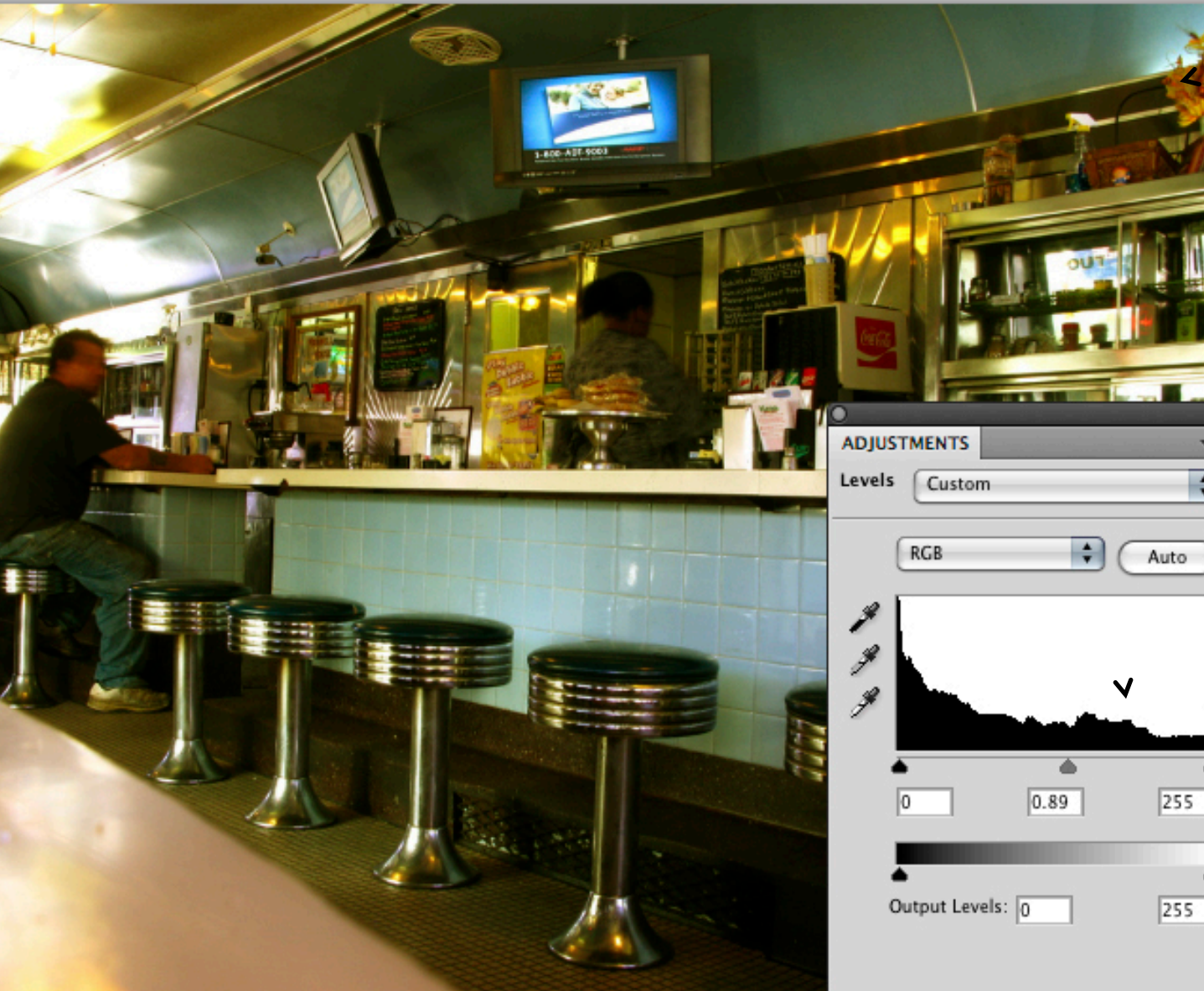


- Solid Color...
- Gradient...
- Pattern...
- Brightness/Contrast...
- Levels...**
- Curves...
- Exposure...
- Vibrance...
- Hue/Saturation...
- Color Balance...
- Black & White...

ADJUSTMENT LAYERS LEVELS

COLOUR CORRECTING

Once open you can adjust the overall RGB composite of the image. Here you can adjust your lights and darks.



ADJUSTMENTS

Levels Custom

RGB Auto

0 0.89 255

Output Levels: 0 255

LAYERS

Normal Opacity: 100%

Lock: Fill: 100%

Levels 1

Diner

ADJUSTMENT LAYERS LEVELS

COLOUR CORRECTING

Because we want to correct the yellow cast as well, lets go to the Blue Channel in the same Levels Adjustment Layer. Here you will find another histogram, but remember this one is for a coloured channel information. Adjusting the gray point here will help get rid of colour casts.



ADJUSTMENTS

Levels Custom

- ✓ RGB C2
- Red C3
- Green C4
- Blue C5

0 0.89 255

Output Levels: 0 255

LAYERS

Normal Opacity: 100%

Lock: [] [] [] [] Fill: 100%

- Levels 1
- Diner

[fx] [] [] [] [] [] []

ADJUSTMENT LAYERS LEVELS

COLOUR CORRECTING



LAYERS

Normal Opacity: 100%

Lock: Fill: 100%

Levels 1

Diner

ADJUSTMENTS

Levels Custom

Blue Auto

0 1.65 255

Output Levels: 0 255

ADJUSTMENT LAYERS LEVELS

COLOUR CORRECTING

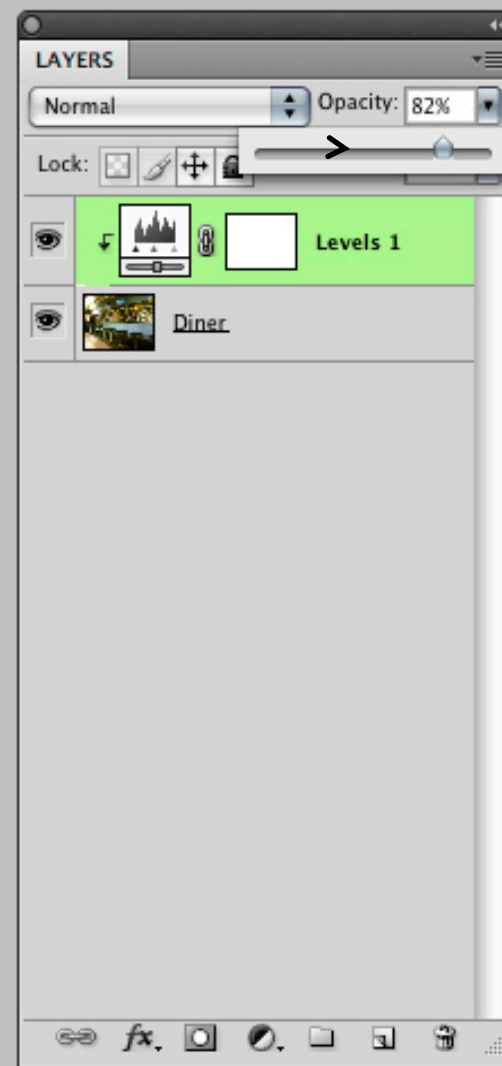
Because Adjustment Layers effect all the layers underneath them, you can attach an adjustment layer to a specific layer and the changes will only take place on this layer. Just put your mouse in between the two layers you want attached and then press **Alt/Option**– you will get a funny horizontal 8 symbol. Just click and it will attach, that way your changes will be for that layer only.



You can see if a layer is attached by the little arrow. To unattach, place your cursor in-between the layers and press **Alt/Option** again and they will separate.

COLOUR CORRECTING

Once again, if your changes are too strong you can change the opacity of that Adjustment Layer.



ADJUSTMENT LAYERS LEVELS