

# Adobe Photoshop Images

## Exercise 2



WVU OIT Technical Support Services

293-4444 (Help Desk)

# Course and Document Description

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## Adobe Photoshop Images

### Exercise 2

We will use Photoshop to restore the original colors and sharpness to a scanned image.

We will learn to use the following:

- An expanded look at Levels and how it makes almost any image better.
- An expanded look at layers and a look at layer masks/
- Using the Channel Mixer to get the Black and White conversions your images deserve.

This workshop is very much a hands-on experience. A poll of user experience is taken before class begins, and materials covered may change based on this information. In trying to accommodate the needs of the class, each class will be slightly different. The core, however, is contained in this document. This handout is a companion to the material covered in the full workshop.

Photoshop is not an intuitive application. Learning to use it can be a frustrating experience. Knowing this, it is very important to play with images and graphics to get comfortable. This workshop series emphasizes practice, play, and exploration to strengthen your Photoshop skills.

We hope you enjoy the workshop and the exercise in this document. Have fun, and don't forget to play!

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# All you know is wrong

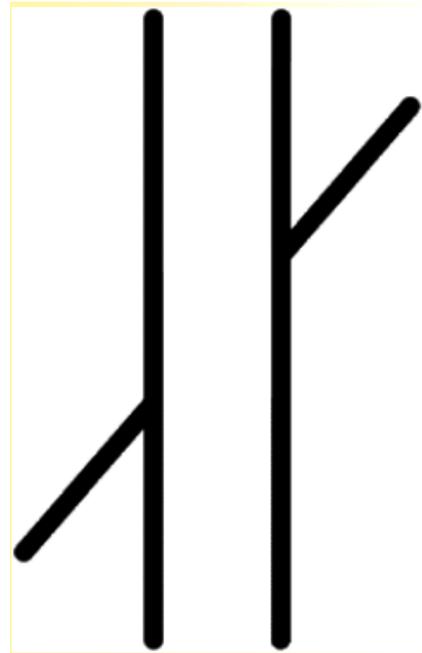
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We've all seen optical illusions like this<sup>1</sup>:

- (1) The graphic to the right is a simple example of how our eyes deal with continuity. Two parallel vertical lines trisect a diagonal line.

Our eyes see it as it is, but our brains muddle the information to produce a flawed perception.

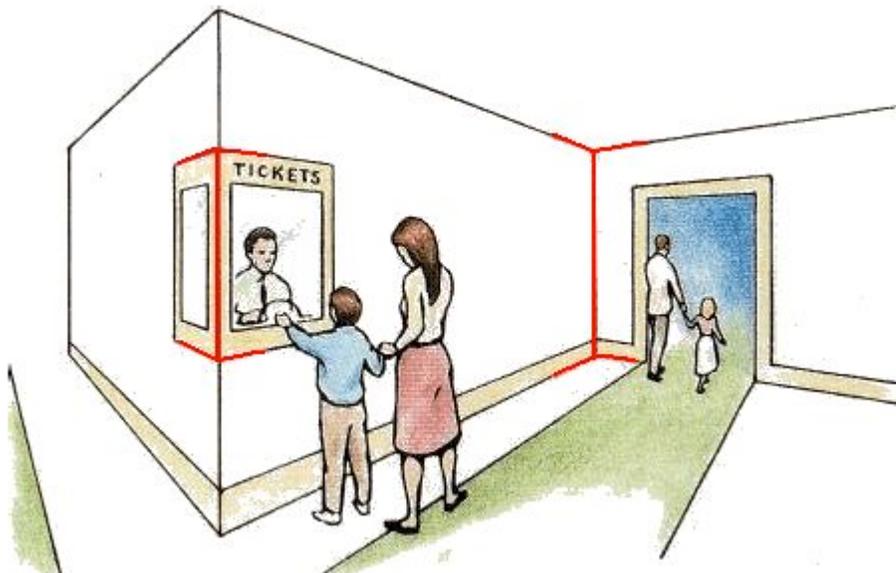
Is the diagonal line straight or offset?



- (2) The illusion below is more complex. You may have seen a version of this before.

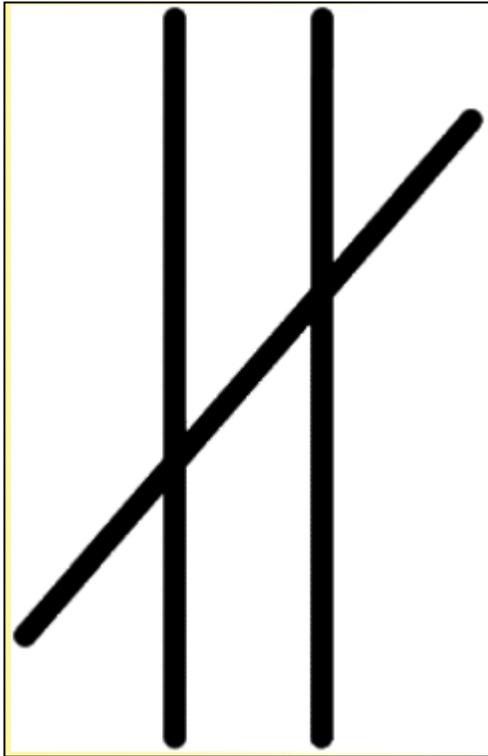
It demonstrates how perspective can distort perception.

Are the two red vertical lines the same length? Are they offset or parallel?



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<sup>1</sup> Images reproduced from <http://www.michaelbach.de/ot/>



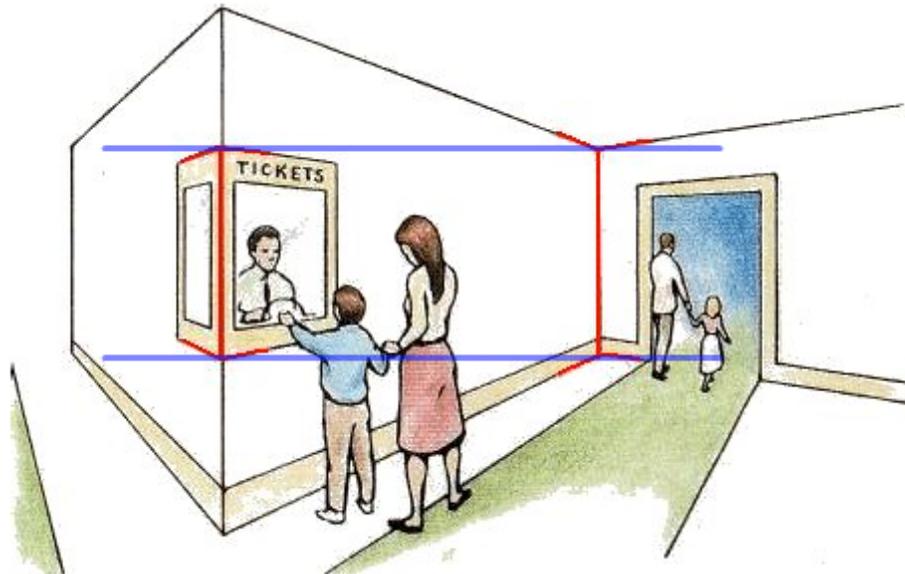
O.k., so our minds play tricks on us.

- To the left we see those pieces of the trisected diagonal are not offset.

- Below we see the red vertical lines are indeed parallel \*and\* the same length.

Internally, the mind often sees what it wants to see, in spite of the information our eyes give it

Bonus info: For those who've struggled with realism in your drawing/sketching, check out Drawing on the Right Side of the Brain<sup>2</sup>. The author addresses these flaws in human perception. She helps students develop a mindset that allows for a truer path from subject to eye to brain to pen.

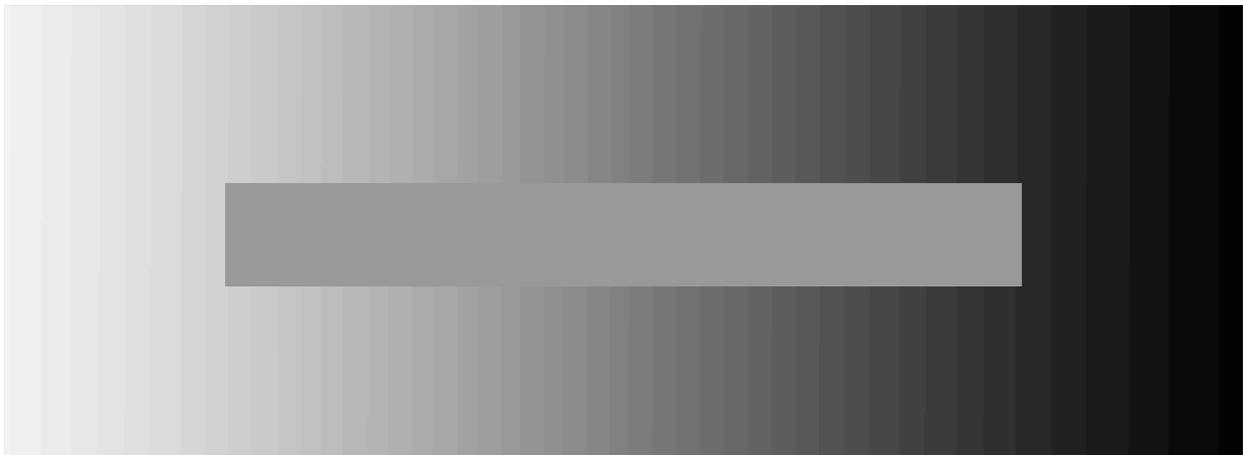
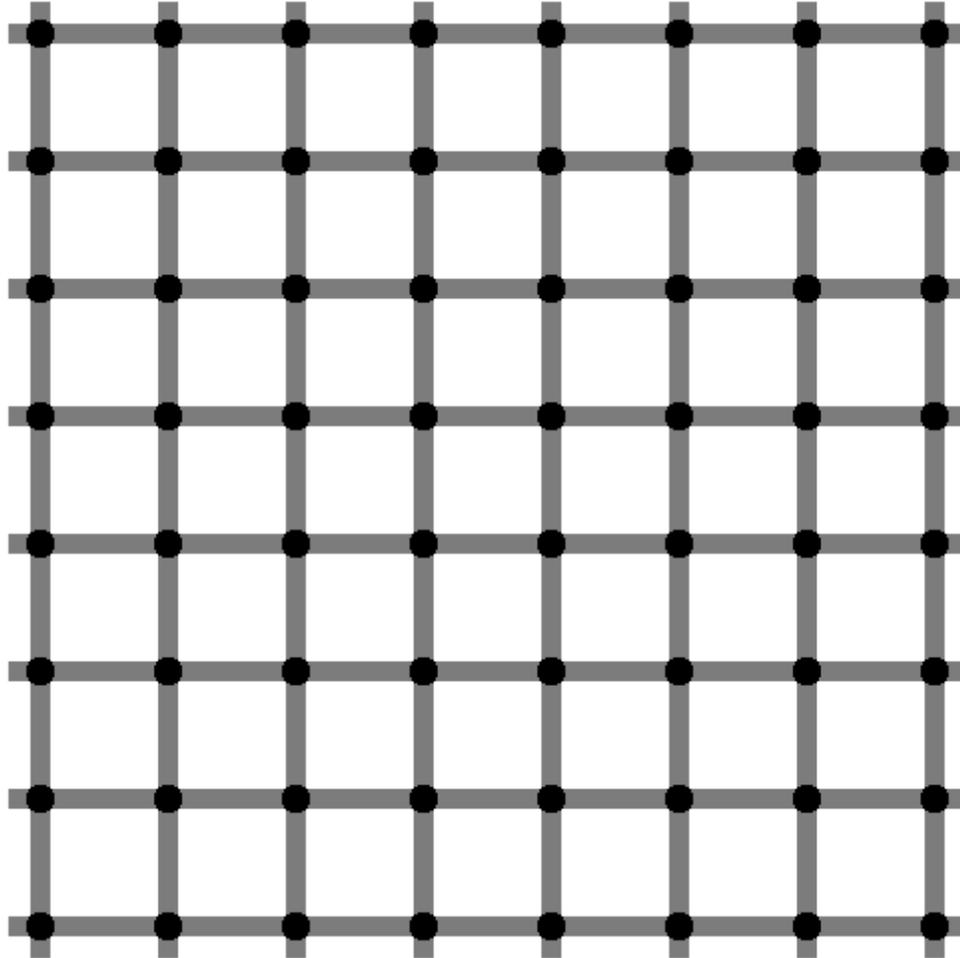


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<sup>2</sup> <http://www.drawright.com/>

***Important Note: Not only do our brains misinterpret perspective and size, but color, too!***

<sup>3</sup>Take a look at the two graphics on this page:



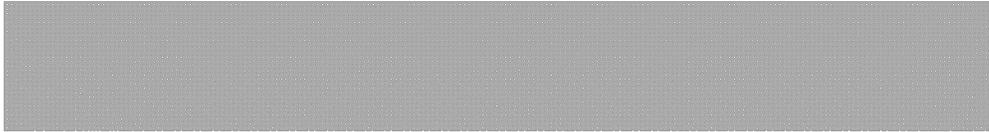
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<sup>3</sup> grid graphic from <http://www.michaelbach.de/ot/>

***Important Note: Color and contrast are relative.***

In the grid graphic, you should see the dots at each intersection flash with a whitish tone. Usually the dot you focus on will appear solid black, while the surrounding points look like they have lighter centers.

When the gradient is removed from the second graphic on the previous page, we see the interior for what it is- a solid grey rectangle.



Our brains are liars.

Our eyes give our brains raw imaging information, but something happens when that data is processed. Human perception is flawed, and anything we see may be false.

How's that for a cheery intro to this workshop?

When working digitally with color in photographs, our eyes are terrible guides. Even the monitors we use to view our files conspire against us- they vary in resolution, sharpness, brightness, and color accuracy.

So how do we \*accurately\* adjust our images to reflect how they should look (in print or displayed electronically)?

Remember Levels from the previous workshop? We'll see what it can do for images after we talk about some digital imaging concepts.

# Honestly, even what you've been told about your camera is wrong.

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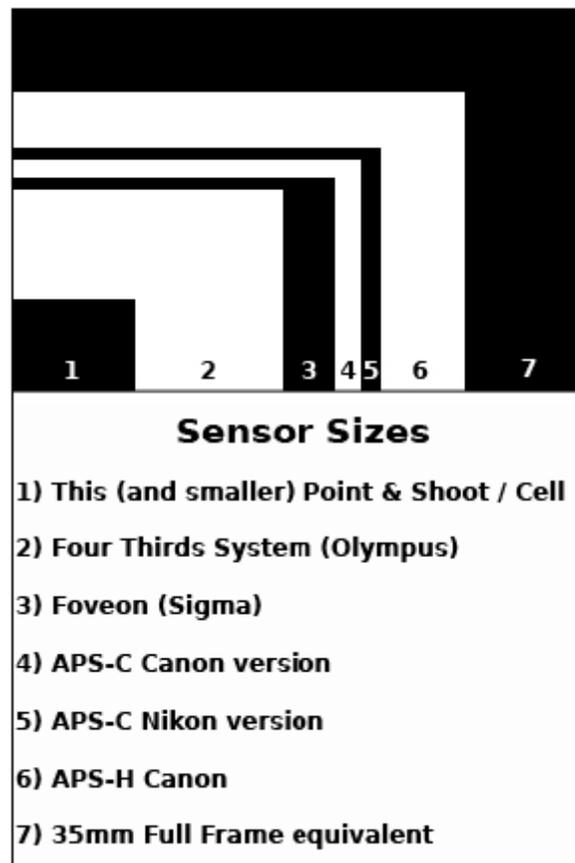
Digital cameras are a diverse breed. There are many manufacturers, many models, many imaging sensors, and many lenses- the list goes on and on.

Here are a few notes and caveats:

## Cameras and Sensors

- Don't get suckered by the megapixel races. More megapixels don't necessarily mean better pictures. It's more the person behind the camera than the equipment.
- Don't believe the marketing hype. If you choose a camera from any brand name, you'll get a device that can produce great pictures.
- Canon or Nikon? For 99.9% of photographers, it matters more what camera you like to hold in your hand than who made it. Try not to buy cameras sight unseen.
- Pixel Density. The more pixels crammed on to a sensor, the greater the chance your images will be noisier.

## *Relative sizes of most common digital sensors*



## Noise and ISO.

Noise is a product of the camera's sensor attempting to translate what it sees to a file. Higher film speeds (ISO on digital cameras) free action better and reveal more detail in low-light conditions.

Film 'records' images on a kind of silver. These bits of silver are light sensitive. When you take a picture, the shutter lets light through to the film, exposing the silver. Your image is, essentially, burned in to the film. The smaller the grains of silver, the longer it takes for them to react to light because they're packed so tightly, but they reveal a great deal of detail when exposed correctly. These low speed films, say 50 to 200 ISO, do poorly in low light or with fast moving subjects. There just isn't enough time for the silver to react to either the lack of light \*or\* the speed of a moving subject.

High speed films, from 400 to 1600, have larger and larger bits of silver on them. Fewer, larger pieces of silver allow for better, faster results with low light and moving subjects- at the expense of detail.

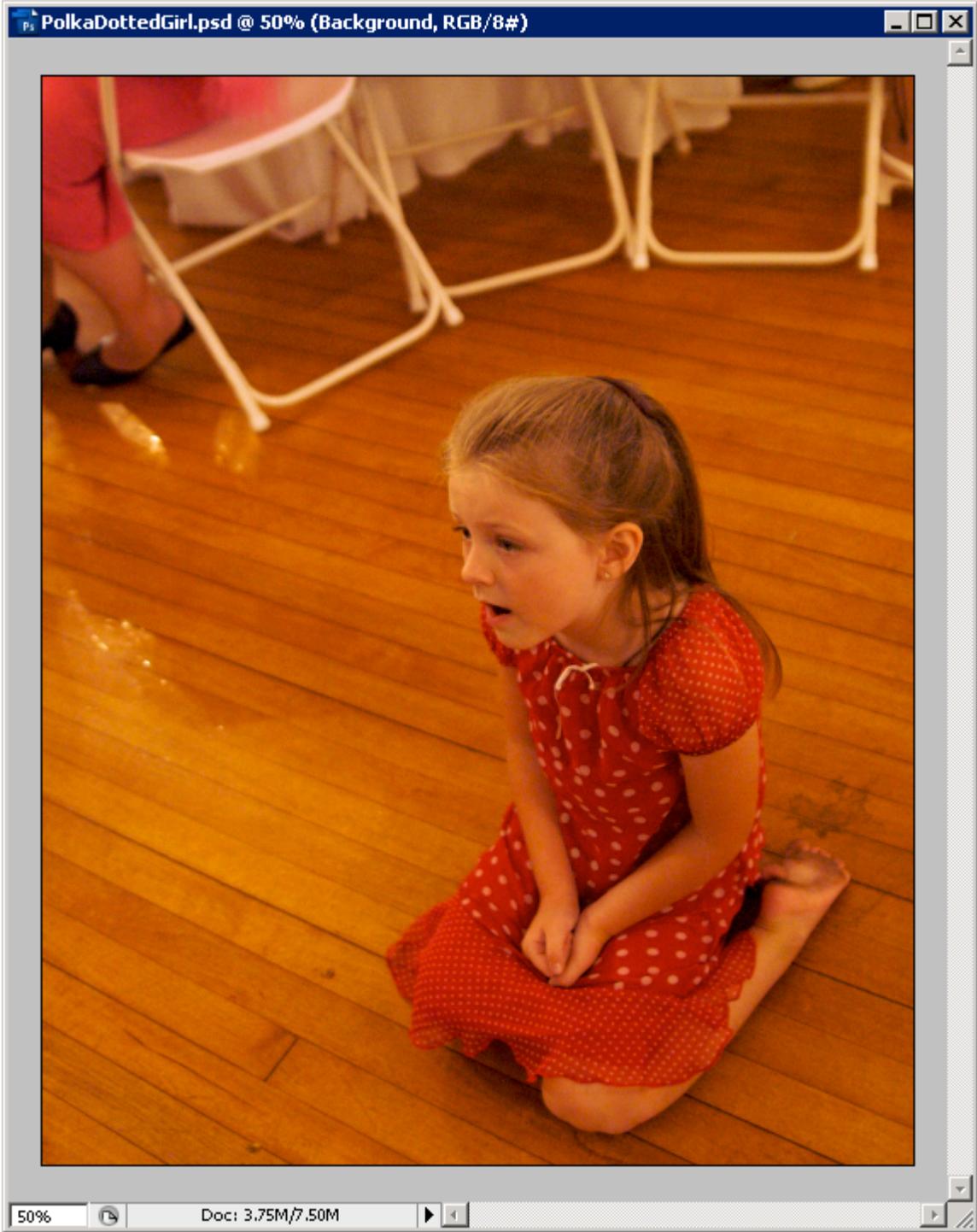


This image could represent two things correctly:

- High ISO on the left (800 and above) vs. Low ISO (below 800).
- A Point & Shoot at 800 ISO on the left, and a DSLR at 800 ISO on the right.

The bigger the sensor, the better your images will look at higher ISOs- generally speaking. Larger sensor = better ability to gather light = less noise in your image and sharper results.

# Levels, and what it does for photographs



Take a good look at the image on the previous page.

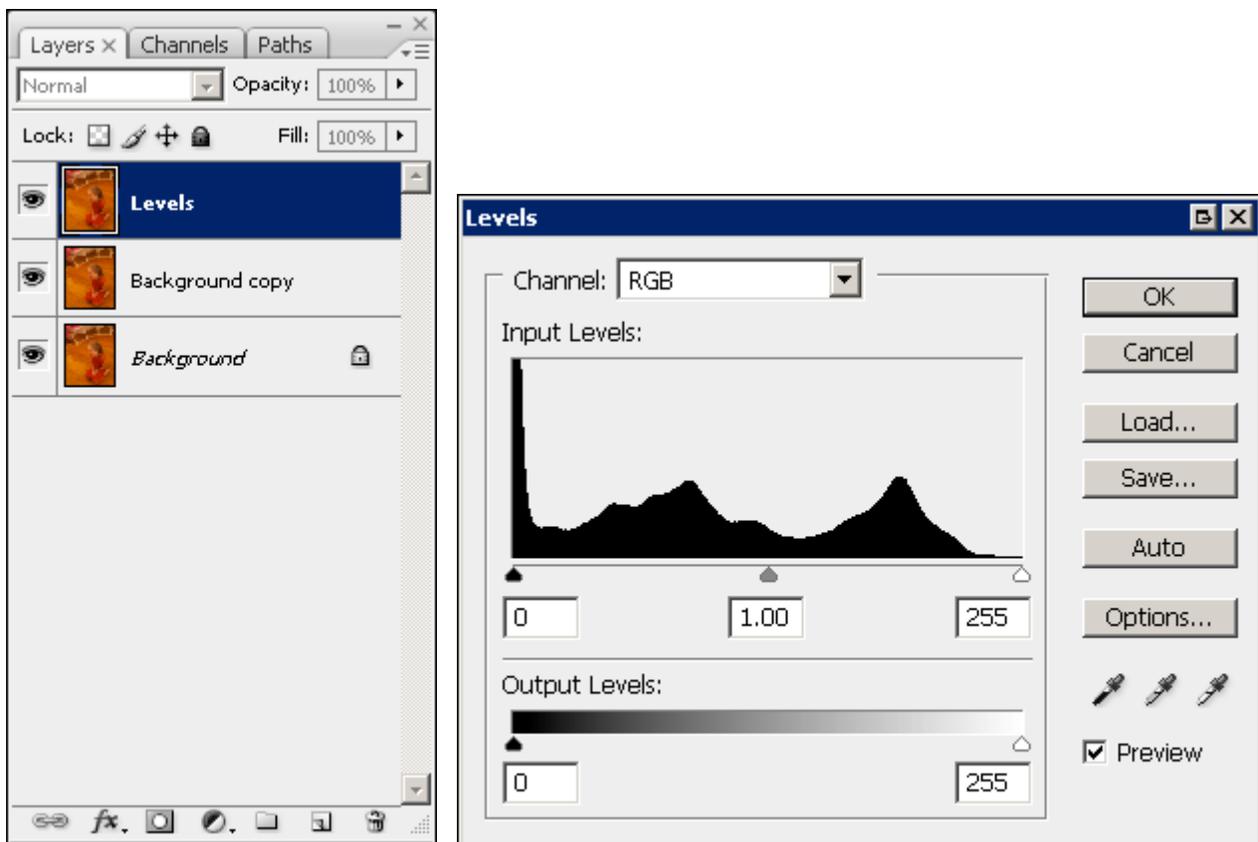
Is there anything that jumped out at you when you first looked at it?

Often we're fooled in to believing an image is just fine, when it could use a thorough tweaking to make it really shine.

Or, perhaps, we think the image could have been better *if* we'd done something different at the time of capture.

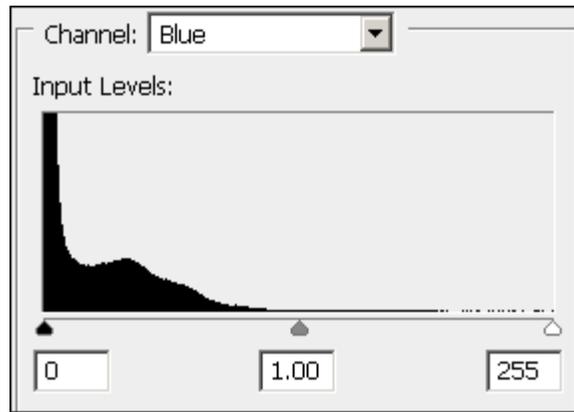
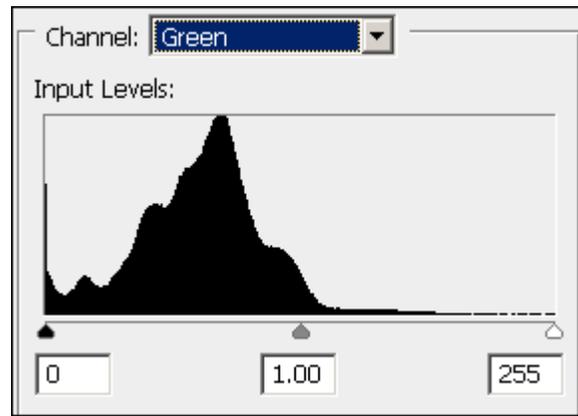
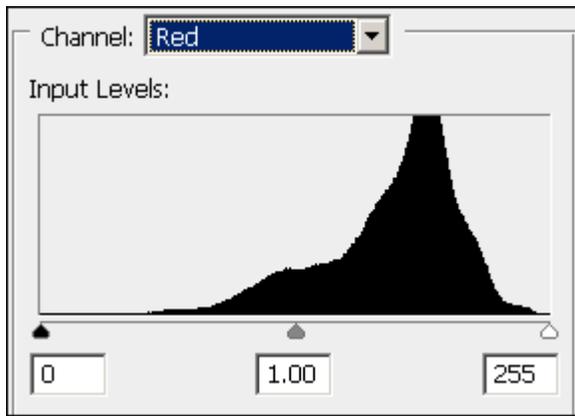
Important Note: The adjustments we'll apply to this image would not, for example, disqualify its use in journalism. We're just pushing the image to take away color casts and restore its true appearance.

## Adjusting Levels



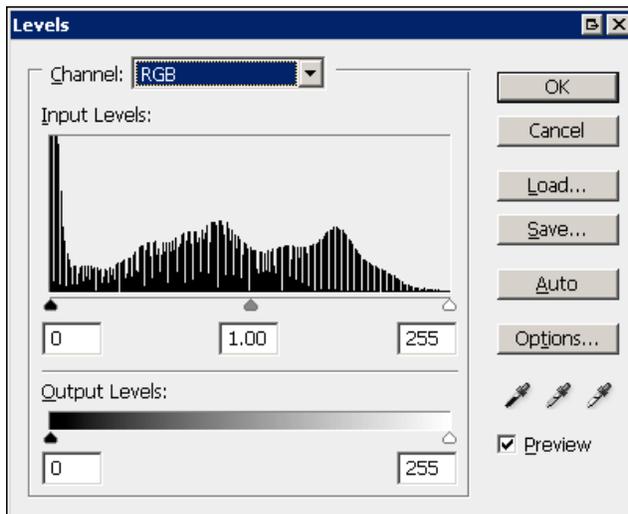
Duplicate the Background layer. Then duplicate the Background copy and name it Levels.

Go to *Image > Adjustments > Levels* and look at the histogram.



Just like we did in with the Intro scanned document, we'll hold down the Alt key when we make these adjustments. Look for the colored blotches to appear. We don't want to introduce too many new ones, as that will destroy information in our image.

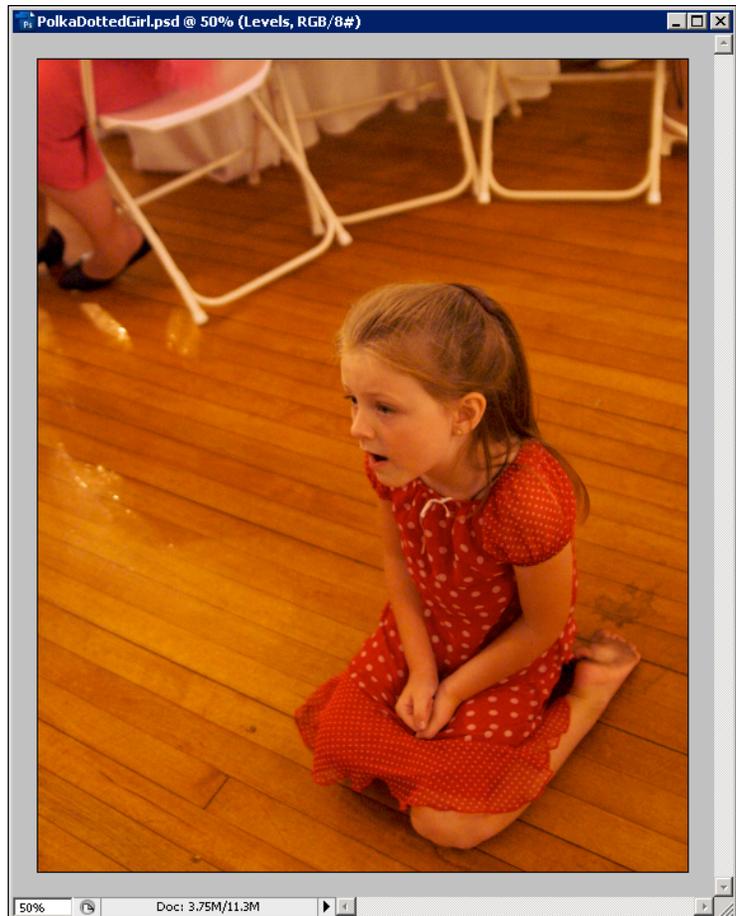
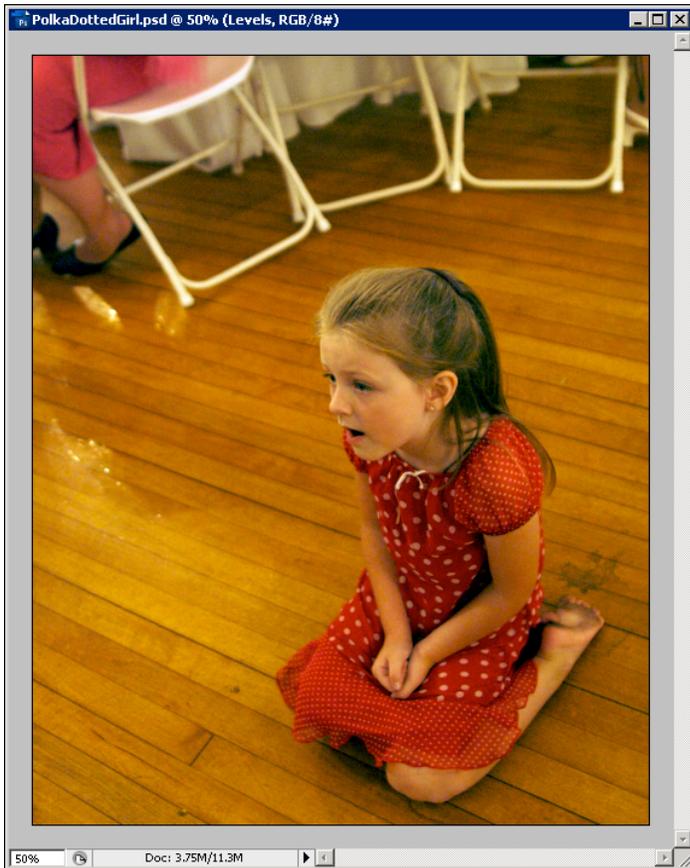
From what we see in the individual histograms, we can tell Red is the dominant bright color. We need to adjust the Black slider for Red, and the white slider for both Green and Blue.



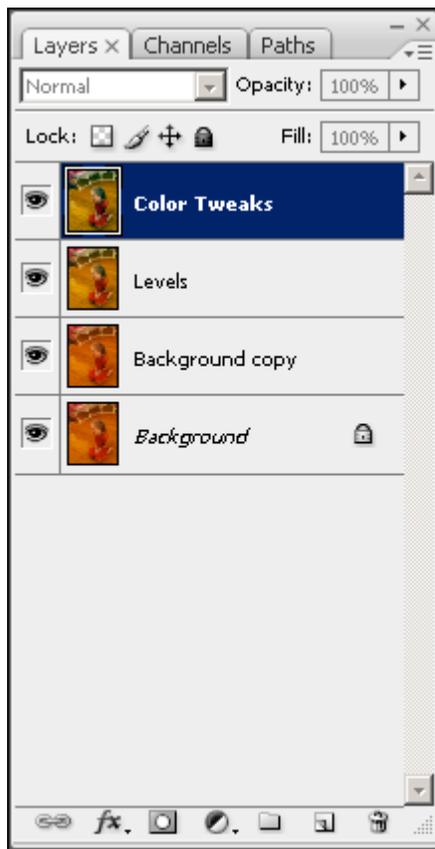
After you make your adjustments, your RGB combined histogram should look like this.

The white vertical lines represent changes to the positions of the Red, Green, and Blue channels.

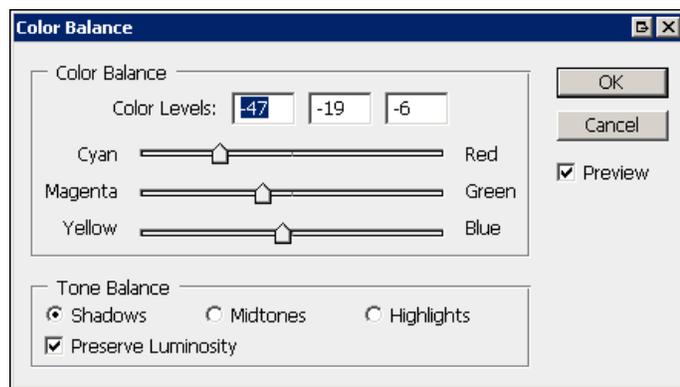
If you change back and forth between the Preview and the original, a veil of reddish color casts should be removed from the image. The floor should have more yellow tones, the skin on the girl's face should look natural, and the chairs should appear whiter than before.



## Correcting Color by Sight via Color Balance



Duplicate the Levels layer and rename it Color Tweaks. Then go to *Image > Adjustments > Color Balance*



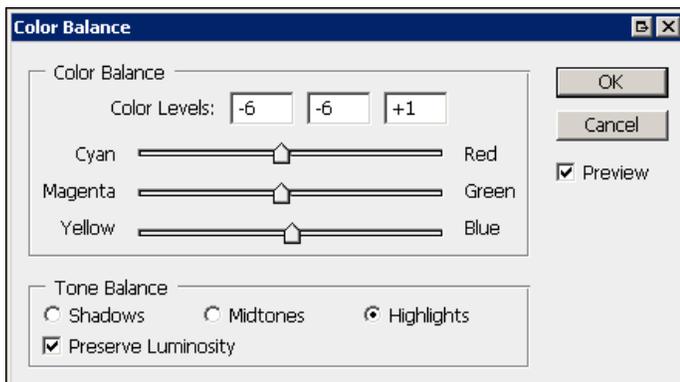
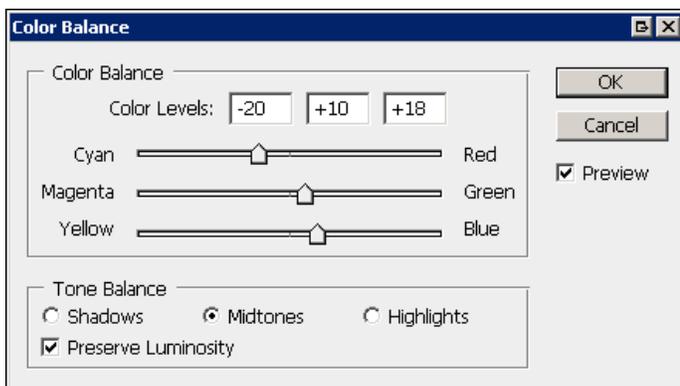
Next, start with *Shadows* under *Tone Balance* in the *Color Balance Window*.

Make sure *Preserve Luminosity* is checked.

Adjust the three sliders under *Color Balance* until you are pleased with the results.

Repeat the same procedure for *Midtones* and *Shadows*.

Click OK when done.



The progression from starting image to final image should look something like this.

