Day 23: Control the Light

- Now we're going to make your picture better - through the magic of post processing.
- If that bothers you, it shouldn't, and here's why: (1) everyone does it, and (2) they always have.
- The first thing we'll work on improving is the brightness values of the picture.

Understanding the histogram

- Think of a histogram as a bar graph of all tones in the image, with 256 columns.
- Use it as a guide to measuring the necessary adjustments. Later we will use it as a tool.

Brightness controls (in Lightroom and ACR, as well as other software)

- **Highlights** - the absolute brightest parts of the image. Typically you will use this slider to pull them down a bit and keep them from being blown out.
- **Shadows** - the darker areas of the image (but not the absolute darkest). I like to pull these up to add detail much of the time.
- **Whites** - the bright (but not the absolute brightest) parts of the image. Use this control to brighten the image.
- **Blacks** - the very darkest parts of the image. Pulling this down is a great way to maintain contrast in the image when you have brightened it.

Additional Brightness Tools

- **Exposure** - the heavy artillery of the brightening/darkening process. I think of this control as one that shifts all tones equally. If you watch the histogram, however, you will see that it works very heavy on the midtones. Use it to bump the entire image one way or the other.
- **Vignetting** - this is a darkening of the corners of your picture. Use it to add attention to the center of the photo.
- **Adjustment Brush** - We will cover this later in the course, but it is a way to make changes to only part of the picture (as opposed to the whole thing).

HDR (High Dynamic Range)

- HDR software is a way to create images where you have an extreme dynamic range problem.
- It is not as necessary as it used to be due to the increasing dynamic range of cameras and the much better control over highlights and shadows you get from software like Lightroom.

Additional Commentary

Today we begin our voyage into the world of post processing. If, upon hearing that, you thought to yourself: "*but I just want to take great pictures straight out of the camera, without adding a bunch of processing*" you can be forgiven for thinking that. Everyone thinks that. The trouble is, that is impossible. Adjusting your pictures after the fact is just a necessary part of the process.

Every great photo you have seen in a magazine or online was processed in some fashion. Go to 500px, for example, and look at the most popular pictures for today (no matter which day you are reading this). Every single one of the top photos will have been created using processing. Sure, they started with a great capture, but then it was enhanced in some fashion. Sometimes it was enhanced a little, and sometimes a lot, but it was always enhanced. It doesn't matter if it is a shot of a model, a landscape, or a street scene, I guarantee you that great shot has been processed in some fashion.

The fact is digital photos *need* processing. Remember back to Lesson 1 when we set up your camera. At that point you began shooting in RAW, and you learned that your RAW files come out of the camera looking a little flat and lifeless. That's not because you want them to be flat - or that the scene in front of you was flat - but rather with the assumption that you will add your own tone adjustments, color, sharpness, etc. later. You need to add some processing just to get these RAW files to the point of looking decent. To achieve your vision in a photograph, you need to add processing. That's what we are going to get started with now.

What's more, this is nothing new. The photographers of old used all manner of darkroom tricks to add contrast, selectively lighten and darken their images, and make other changes. Many of the names and icons used in Photoshop actually got their names from their use in the days of film. If you are familiar with the terms dodging, burning, and unsharp mask, all of these came from the days of film. When Photoshop was created, they simply recreated the same tools.

A great example of this is the photo *Moonrise, Hernandez* by Ansel Adams, which is one of the most famous photos ever made. A straight print of that negative looks nothing like the version you have seen. Even early prints were much different than what Adams ultimately made (with the black sky). Adams applied a lot of processing to that photo to make it as great as it is. In fact, Adams – a musician by training - famously emphasized the importance of processing pictures by stating that the negative was the "score" and making the print was the "performance."

The point of all this is that you need to process your photos if you are going to be at all serious about your photography. There is no way around it. The medium relies on processing, and has always been that way.

Which Software Should You Use?

Until very recently, the only two options for post processing software were Photoshop and Lightroom, both of which were made by Adobe. There are other options becoming available, but still, as I write this, the two options the vast majority of people use and - dare I say it - the best options, are Photoshop and Lightroom. So that is what we are going to use in this course. Let me start by explaining a little about them.

First let's talk about Photoshop, because it came first. Photoshop has been around for over 20 years, which is absolutely *ancient* in the world of digital photography. For most of that time frame, it was essentially the only option. It kept getting more and more features added to it as time went on. In a testimonial to the dominance of Photoshop, when other developers built photo editing software, rather than build their software to stand on its own, they usually built software to work *within* Photoshop. These were called plug-ins.

To this day, Photoshop remains the most powerful photo editing software on the planet. It is absolutely amazing. If you cannot do something in Photoshop, it cannot be done. So why aren't we using Photoshop exclusively then? Mostly because it is very difficult to learn. It is not intuitive at all, and it would just take a long time to become even mildly proficient. We'll use it, but only for discrete tasks that cannot be done elsewhere.



Advantages of Photoshop

The most powerful image editor in the world

1. It has all the editing tools you will ever need.
2. It excels at retouching.
3. It has layers and allows for blending and compositing.
4. You can also edit video.

Downside: Non-intuitive. Very Difficult to Learn.

The primary competition to Photoshop actually came from Adobe itself. About 10 years ago, Adobe introduced a simpler piece of software called Lightroom. At the time it was simply a way to organize your photos with a RAW editor as well. That's still partially true today, but the RAW editor is very powerful and you can do about 80 - 90% of what you can do in Photoshop.



So which should you use? Easy answer: both. Use Lightroom for the vast majority of your edits, and then take the picture into Photoshop when you need to take advantage of its advanced features.

You are probably concerned with having to buy both, and that makes sense. But in a sense Adobe has made it easy for you. A few years ago, Adobe stopped selling its software and started renting it. Instead of paying several hundred dollars up front, you now pay a smaller amount each month. To accommodate photographers, Adobe has created the Photography Plan, which gets you both Photoshop and Lightroom for $10 a month. That's what I recommend you use.

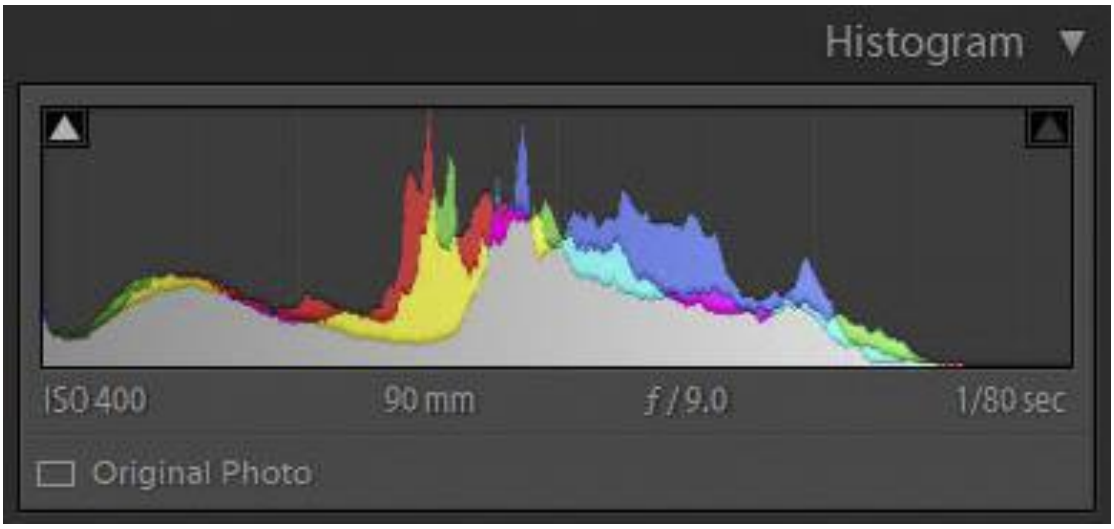
If you have questions about that, check out this article I wrote to try to explain everything.

Monitoring Changes to Tones - Using the Histogram

We are going to be using the histogram a lot in this lesson. We have talked about it before in this course, but let's make sure you understand it. Remember that, at its core, a histogram is just a bar graph and each bar is a specific lightness value of pixels within your picture.

A histogram is just a more detailed version of a bar chart than you are probably used to. That's because it has 256 columns, and each column is a shade from black to grey to white. The bars on the left side of the histogram are the darkest pixels in your picture and the bars on the right are the lightest. The columns are lined up from 0 (the darkest value, basically pitch black) to 255 (the lightest value, solid white).

The histogram is a graphical representation of the exposure values of the pixels in your image. When you look at the histogram in Lightroom, you will see it appears in various colors. That's because Lightroom uses RGB color and Lightroom is showing you the histogram as a combination of the three color channels (Red, Green, and Blue). Don't get hung up on that though.

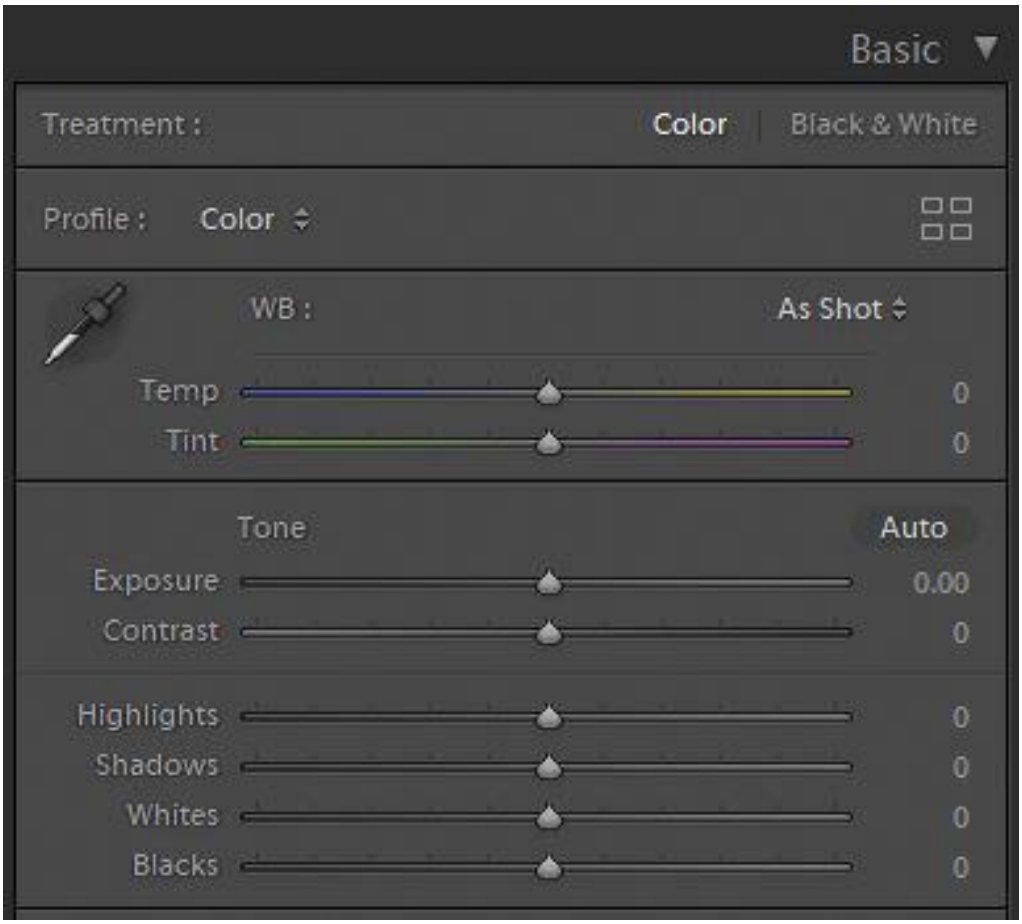


Since there are so many bars in the histogram and they get put right next to each other, the chart usually appears to take on a shape. People will sometimes try to read things into the shape of the histogram. For the most part, however, you really don't need to worry about what shape your histogram is in.

The histogram will be at the heart of a lot of the editing we do. Now that you understand it a bit, we'll move on to the controls that change the image - and we'll talk about that in the context of how they change the histogram as well.

Basic Panel

In this lesson, we are going to use the controls found on the Basic Panel of Lightroom or ACR. You're likely to find very similar controls on whatever software you use. Let's talk about what each of these controls does. First, let's talk about the two controls that affect all the tones in the image: exposure and contrast.



Exposure

This slider controls the tones of all the pixels in the image. When you move it up and down, you will see all the tones of your histogram move up and down. It is designed to work on the mid-tones of the image (and you will see the middle section of the histogram light up when you use it), but it is really used to make overall adjustments.

The Exposure slider is great when your overall image is overexposed or underexposed, because now you can fix that. That's not so great, however, when there is one discrete part of the picture

you want to work on, and lucky for us Lightroom has separate controls for controlling those, which we will get to in the next section.

Contrast

The Contract slider also works on all the tones in your image, but it acts by separating the tones. If you make an increase while watching the histogram, you will see the tones spread out to both the left and the right of the histogram at the same time. In other words, your dark tones get darker and your bright tones get brighter.

Specific Tone Controls

The next four sliders you will see in the Basic Panel all control discrete portions of tones within the image. To get an idea of what is what, just pull up and down on each of the 4 sliders we are covering in this section and watch how the histogram reacts (it will actually highlight the area you are adjusting). In any event, here is a quick description of each:

- The darkest tones are the Blacks. This control affects the very darkest tones in the image up to about the 20% mark (if we were to measure the brightness and darkness values of the images in percentages, which Lightroom does not do, and frankly I just made up).
- Moving to the next brightest set of tones, we have the Shadows. This is about 20-40% on the brightness scale I just made up. These are still dark, but not the darkest tones in the image.
- Moving up from there, the next set of tones are the Whites. These cover the brightest 60-80% of the tones in the image. In other words, it adjusts the tones that are bright, but not the very brightest in the picture.
- The top section is the Highlights. This controls the top (80-100%) tones. In other words, it is used for adjusting the brightest tones in the picture.

If that helps you visualize these controls, go with it. If not, don't worry, and we'll cover each of them now. We'll talk about them in the order they appear in Lightroom's Basic Panel.

Highlights

The first control is Highlights, which are the brightest tones in your image. An adjustment here will act primarily on the very brightest tones in your image. As an example, pull them down and watch how the tones on the very right of your image move toward the center, but the other pixels largely stay in the same place. You'll use this a lot for fixing blown out highlights and extremely bright portions of your image.

Shadows

The next slider is Shadows, which is the darker - but not the darkest - tones in the image. Adjusting the Shadows slider affects those tones on the left side of the histogram, but not to the very far left. A great use for this slider is increasing darker areas in your image that you want to show up better. Pull up on the Shadows slider to make that happen. You'll adjust contrast with the Blacks slider in just a second.

Whites

The third slider in this group is the White slider. This one controls the bright tones in the image - just not the very brightest. This is a great tool to use for brightening the image. You pull it to the right and it brightens all your brighter tones, but maintains some contrast because it leaves your darker tones alone.

Blacks

Finally, we have the Blacks slider, which, as you might expect, controls the absolute darkest tones in the image. Looking at your histogram, these will be the pixels to the very left of the scale. There are a lot of good uses for this slider. One is to maintain contrast, which you do by pulling the Blacks slider to the left. This is often very useful after you have brightened the image overall. Another good use is to darken the whole image. I find using the Blacks slider works pretty well for this because it is powerful and it leaves the bright tones alone to a certain extent, so it maintains contrast.

Setting Your White and Black Points

Many times you will want to "set your white point" or "set your black point." That means you reset your picture so that the darkest part of your picture is pure black and the brightest part in your picture is pure white. When you do this, you ensure that your picture covers the entire tonal range. You do not have to do this by any means, but a lot of times it is a good idea.

To do so in Lightroom, there is a little trick you can use. Hold down shift and double click on the head of the Whites or Blacks sliders. Doing so on the Whites slider sets the white point and doing so on the Blacks slider sets the black point.

Adjusting Tones by Targeting Colors

You can also control the brightness and darkness of portions of your image by targeting colors. To do that, scroll down to the HSL/Color panel. There you will see a series of color sliders. Be sure that the control at the top is set to Luminance (which basically means brightness), and then when you move the color sliders, they change the brightness values for the pixels with that particular color.



The beauty of this is that you have yet another way to target pixels quickly and easily. Not only can you target pixels by brightness values - using Highlights, Shadows, Whites, and Blacks - but also by color. Without getting to selections or local adjustments, we can make targeted changes to our pictures using these tools.

Using Photoshop to Control Tones

For the most part, there is no reason to go into Photoshop to control tones. You should use Lightroom for that. Even if you don't have Lightroom, you can use the ACR screens that appear immediately upon opening of your image in Photoshop. The controls there are exactly the same as the ones in Lightroom.

If you do decide to use Photoshop, there are a number of tools you can use. In the course video, I showed you Brightness and Contrast adjustments, Shadows and Highlights adjustments, or a Levels command.

By far the most powerful tool, however, is the Curves Adjustment Layer. In fact, the Curves Adjustment Layer is probably the most powerful tool in all of post processing. You can use it to adjust not only brightness, which is our subject for today, but also color and contrast.

The Curves Adjustment Layer is not the easiest tool to master. Quite frankly, it is difficult to even get started with. I would write something here to help you get started, but, frankly, I've already done it. So rather than do it again, I'm just going to point you to this article on my website:

Getting Started With Curves

As the name implies, this article will get you started with this powerful tool. Flip through it and decide if it is something you want to use.

If you are likely to stay in Lightroom (or ACR) for your edits, then maybe you don't need to dive in. But if you think this is something you might use, then use this article to learn the basics. After a while, you'll learn how to use this tool to affect color, texture, contrast, and even sharpness. It is a very powerful tool.

Day 23 Assignment

Enhance Tones

Description:

Find one of your pictures where the lighting or exposure is off. Use the Lightroom and Photoshop tools we discussed in this course to fix it.

Keys to Success:

- Concentrate on the Lightroom sliders in the Basic panel, especially Highlights, Shadows, Whites, and Blacks.
- Use the Exposure slider only if you have an extreme problem.
- Play with Curves adjustment layers in Photoshop. Keep them simple for now and don't use any complicated curves. Just pull in the end points and/or pull the line up to brighten or down to darken.

Upon Completion of this Assignment:

This will allow you to save a lot of really nice pictures. Sometimes the exposure is just a little off, and now you can fix it. You'll also be able to enhance good pictures as well. You are now on your way to being in complete control over the tones in your pictures.

Tomorrow you will learn how to do this more selectively, which will make these tools even more powerful!