About exposure

Once upon a time, exposure was manual. A photographer measured the light with an exposure meter or set her camera to reflect the lighting on the scene; direct sun, shadow, cloudiness, Today many of us set our cameras to "Auto" mode and let it decide on the correct exposure. While that sort of works I want to explain why it may not be the best approach to your photography; especially your doll photography

1 - The histogram:

A histogram is a graph. The left edge of the graph represents the darkest tone which can be captured by your camera and the right edge represents the brightest tone which can be captured by your camera. It shows how your image is distributed across the tonal range.



This is your histogram as presented by Adobe Camera Raw (ACR) to Photoshop. If your camera supports RAW image capture you ought to be using it or you are not taking advantage of all your camera can provide. RAW image capture is not the topic of this tutorial however.

I need to digress for a moment. At the dark end of the histogram you don't have much color depth or resolution. At the extreme low limit of the sensor it only detects light or not, two tones. When the light level doubles you still have only 4 levels and doubling it again gives 8. The point is that at the dark end of the camera's sensor range you have very limited tonal depth. The bright end of the histogram is a very different situation. At the maximum light the JPG image format provides 8 bits of color depth. When you halve the amount of light you still have 7 bits of color resolution and halving it again still provides 6 bits. The point here, and it's an important one, is that data at the right hand side of the histogram is richer than the data at the left side of the histogram. Here is the take away. If you get nothing else out of this tutorial, remember this.

2 – Rule #1

When you capture an image it is better to have it too light than too dark.

I'll come back to this in a moment. For now, call it rule #1.

Most images taken outdoors contain a wide range of tones from bright sunlit areas to deep shadow areas. These images will normally fill the histogram from edge to edge. Many, if not most, doll photos are taken indoors and will show a more condensed histogram.

The auto exposure function in your camera will try to render the average tonality of your subject as a middle tone. Let's think about that for a moment. Suppose you take a photo which only contains a square of sidewalk in a local park; as that's pretty much a medium gray it will probably look quite natural. Now suppose you want to take a photo of a white sheet on your bed. Will it look white out of the camera?? Nope, it will look a lot like that medium gray sidewalk square. Now take one of the black screen on your TV when it's turned off. Black? Nope, medium gray again.

Here is a corollary to rule #1

It is OK to darken things in your editor but try to avoid lightening them.

So what to do? If your image is primarily light tones, as it sometimes is with your dolls, your camera will underexpose the photo and I'm telling you not to fix it with your editor. Frustrating isn't it? Fortunately I'll not leave you without options. Even simple point and shoot cameras will allow you to override the automatic exposure. (Disclaimer: I've never used a smartphone camera and have no idea at all what controls they might provide). If you are using a smartphone camera it may be that you will need to lighten the image in your editor; after all, I didn't say you couldn't; only that you should avoid doing so.

To lighten the image from the camera look for a control with a [+/-]. It's frequently black and it's frequently a menu adjustment. Hopefully your camera has a mode where it blinks overexposed areas on the image review. If your camera has such a function use it. Now to get perfect exposure look for blinkies. If you have them back off the exposure. If you don't have them try increasing the exposure. You want to give the image as much exposure as you can without blowing anything out.

Here comes rule #2: It will sound as though it contradicts rule #1 but it doesn't really. What it does is to put the photographer (you!) on a tightrope. Ready??

Under no circumstance must you overexpose, blow out, any portion of your subject.

"Stop, stop", you say, "Lighten it but don't overexpose it??" Yep. Never said this was easy and I'd not blame you at this point if you said "To heck with all this complexity. I'll lighten it in my editor." and that's quite a tenable position. You'll not get the best possible image quality but what the heck. Probably good enough for the dolls. They rarely complain.

Here's the thing. Back in the days of film photography you exposed your film and turned it over to a photo lab where a trained technician with a \$250,000 machine corrected and printed your negative. Today if you want an actual print you upload your image to a photo lab where a trained technician with a different \$250,000 machine corrects your image and prints it. But what if you want to upload it to a photo sharing site or your Facebook feed or.... Oops! No technician. No \$250,000 machine. Just you

and your photo editor. That's why any photographer today needs to have some skill at photo editing. Today's cameras and cellphones are pretty darned good but what they provide just isn't as good as what you can achieve with only some basic knowledge and your photo editor.

So how do you correct for exposure in your photo editor anyway?? I personally use Photoshop but Adobe's Photoshop Elements is very similar and other photo editors I've used provide equivalent functionality. In Photoshop there are two main ways to correct exposure, "Levels" and "Curves". As Photoshop Elements does not support a Curves adjustment I'll not cover that here.

This is the edit window for Levels. There are three adjustments. A white point set, a black point set and a gray levels adjustment.



Immediately underneath the histogram are three triangles; a black one on the left, a white one on the right and a gray one in the middle. One of these sets the black point for the image; one sets the white point and one sets how the grays fit in.

You will not need to ever play with the lower portion of the Levels edit window.

To set Levels; If there is a flat line to the right of the histogram, pull the white point set adjust to the left until it barely touches the exposure curve.

Likewise, if there is a flat line to the left of the curve, drag the black point sit control to the right until it just touches the exposure curve.

Once the black point and white point are set, moving the gray point set will shift the midtones lighter or darker. Dragging to the right will lighten, dragging to the left will darken.

Here is an example. The doll is a white resin Dollmore Judith in a white dress photographed against a white background. I intended for it to be a high key image. Here is the photo out of the camera.



Remember what I said about the camera wanting to present things as a medium gray? This is not the high key image I was looking for. Yes I could lighten this in my editor but I'd rather dial in some positive exposure offset. Here is the same image taken with an exposure offset of +1.7 stops.



Much better, and I don't need to lighten it in the editor which is the goal.

Here is the opposite situation. This time the doll is a Sasha Caleb in a dark outfit and against a dark background; a low key image. As expected the camera renders everything too light.



Now though wrong, at least its in the right direction this time. Remember rule one. If an image is too light it is OK to darken it with your editor. A few minutes fussing with it in the editor and look how much better the edited one is.

In summary there are two points I would want you to take away from this.

- 1) When you post an image to the web, the quality of the image is entirely your responsibility and your camera can be fooled by the subject.
- 2) Try to avoid lightening an image in your editor. Experienced photographers call it "Shooting to the right" referring to the histogram.

Happy shooting!!