Photoshop Tips

Tip #4:
Dynamic Range

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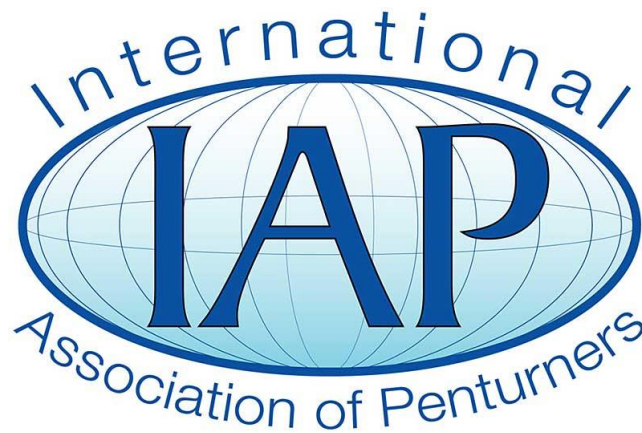
There are several problems getting a photograph to look good on the web. A big one is that no two monitors look exactly the same. I regularly use three separate displays — and pictures appear distinctly different on each (even when color calibrated). One has good color rendition and contrast. Another always looks a bit oversaturated. The third is a rather dull and dark. There's no way to make a photo that looks its best on all three.

Therefore, it's simply not worth trying to get a web photo perfect. The best we can do is shoot for an image that looks good to the widest possible audience. This tip contains the simplest mechanism I've found to standardize a photo for that purpose.

I'm going to start, however, with a seemingly different discussion - exposure and lighting. Here are three different shots of the same pen. One is underexposed, one slightly overexposed, and one correct.


The first photo looks dark, or "muddy". In the second one the highlights are a little blown out. The third is correctly exposed, but is a little lacking in dynamic range. That is, the whites aren't totally white, and the blacks aren't completely black. Such a photo could be characterized as "dull". I see this problem most often with insufficient light, or when using a light tent. When we diffuse light to cut harsh shadows, we often rob the photo of dynamic range as well.

If you have trouble judging correct exposure just by looking, you can load the photograph in Photoshop (I'm using Photoshop Elements version 8 in this example), and click "*Enhance -> Adjust Lighting -> Levels*".
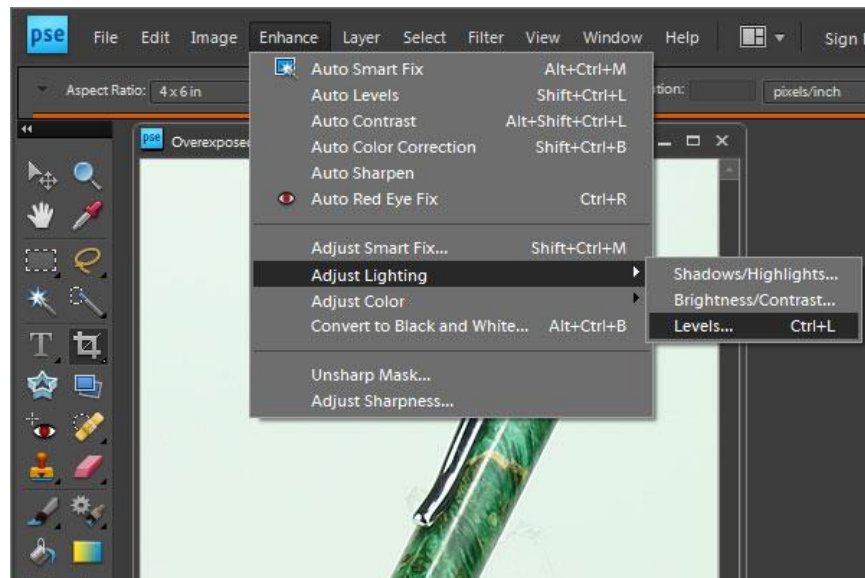
This will bring up a histogram, which is a graph that shows how much of a photo is how bright. Assuming an even tonal balance in the subject, an underexposed photo's histogram will show lots of dark, and little to no light areas. An overexposed photo will show a spike on the far right with little to the left. The histogram for a correct exposure will not have gaps on either end, or at least the gaps will be even.
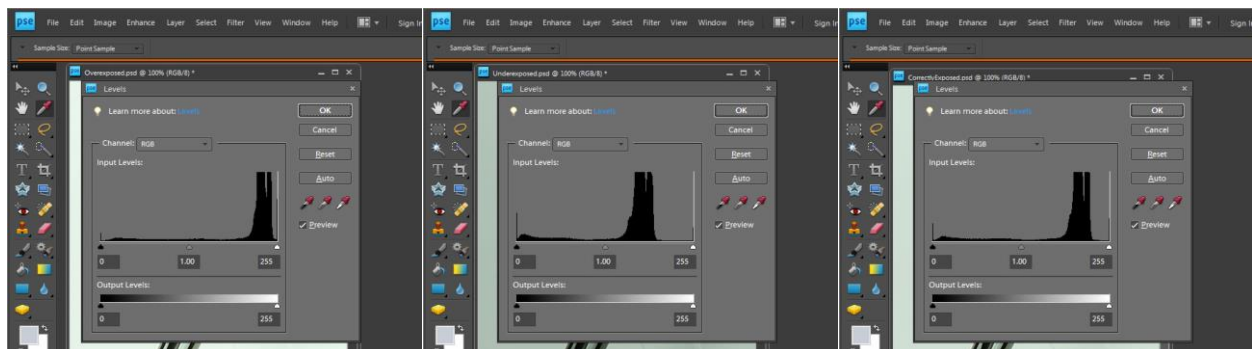
High values on both ends of indicates that the subject has higher dynamic range than the camera could capture. Gaps at the ends is a sign of low dynamic range. It means that the photo has middle tones, but lacks extreme dark and light areas. There are ways of handling excessive dynamic range by merging multiple photos, but I rarely see that problem in pen photography. Low dynamic range is far more common.

The solution is very simple. In the Levels dialog, click [*Auto*]. Photoshop will expand the range of each color channel, yielding brighter highlights and darker shadows, without losing the detail in either. This almost always produces an image that is livelier, and will display better on a wider variety of monitors. If you like the result, click [*OK*]. If not, click [*Cancel*] or [*Reset*]. You can also adjust the sliders, or input values for greater or lesser effects. The same change can be made from the main menu by clicking "*Enhance -> Auto Levels*". Here is the result: