

Color Correction/Grading Tips

Terms:

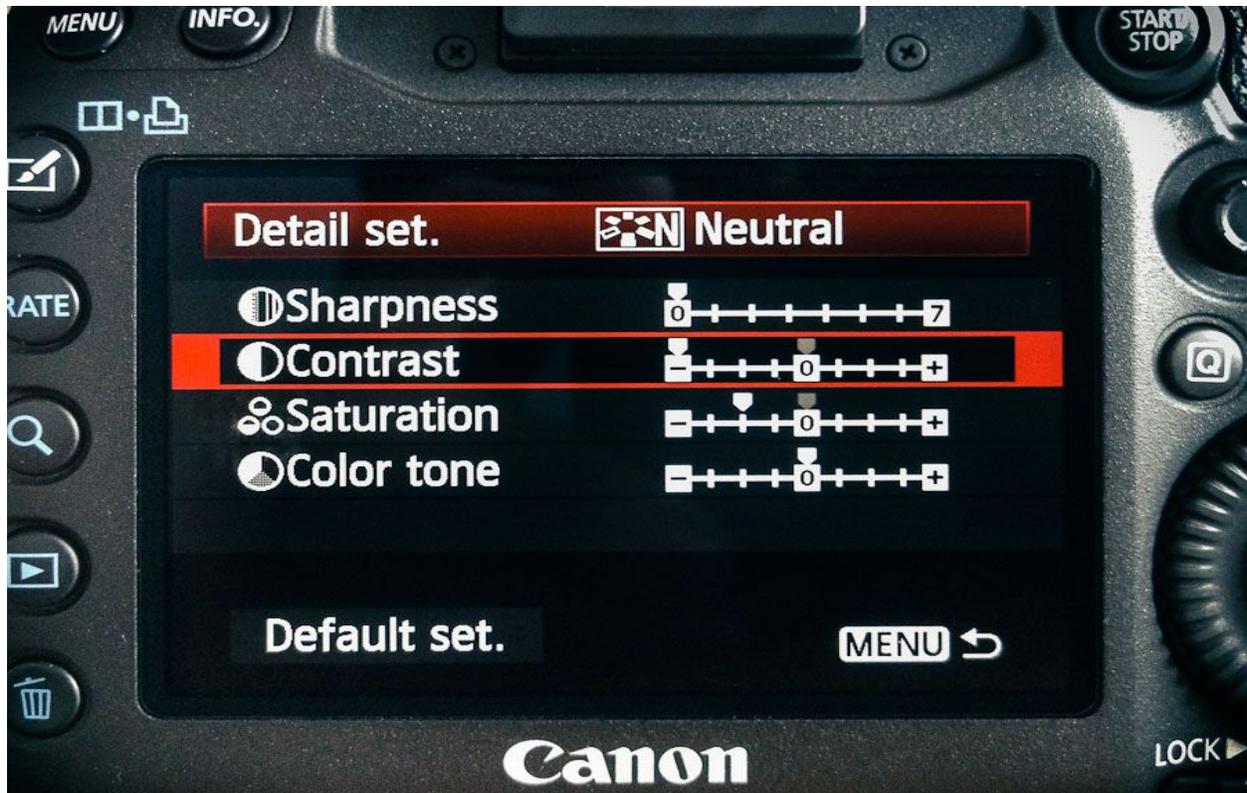
- **Dynamic range:** Measured in EV (exposure value). Refers to the amount of lighting values that you can distinguish in your image between pure white and pure black. The goal is to have the most dynamic range possible.
- **Clipping:** The moment either a shadow or highlight loses detail and just becomes pure black and pure white respectively. This is generally a bad thing, although some entertainment companies (Marvel) will intentionally “crush the blacks” for a gritty and cinematic look.
 - Blown out (clipped) highlights are never a good thing. The reason for this is that human eyes have much more dynamic range than cameras are able to capture and thus are thrown off when they are unable to see detail in an area of an image.
 - Human eyes do not clip so your image should not either.
- **Tint:** A measure of green and magenta (purple) values in your image.
- **Color cast:** Usually refers to a production mistake in which your image has a strong color scheme out of the camera (poor white balance). Color casts should be avoided at all costs during production and only inserted in a controlled environment in post.
 - The most common color cast is the dreaded yellow tint, which results from having an outdoor white balance while filming indoors.
- **Flat:** A type of picture style where your image looks flat, lacking contrast, sharpness and often saturation.
- **Highlights (Gain):** Parts of your image that would be white if you took away all color (skies, bright areas).
- **Midtones (Gamma):** Parts of your image that would be grey if you took away all color, the bulk of your image (anything in the middle of the lighting spectrum).
- **Shadows (Offset):** Parts of your image that would be black if you took away all color (literal shadows, dark areas).
- **Noise/Grain:** Those little dots bouncing around your image when you boost the ISO too high. Best to avoid.
- **Complementary Colors:** Two colors on opposite ends of the color wheel juxtaposed in the same image.
- **Color Splitting:** Taking two areas of the image (Ex. Midtones and Shadows, Shadows and Highlights etc.) and pulling the color wheel in opposite directions to achieve a complementary color scheme.
- **Chroma:** Color
- **Luminance:** Lighting

Color Correction vs. Color Grading

- **Color Correction:** The process of fixing production mistakes.
 - For example, an overexposed shot or a yellow color cast in an image
 - It is basically neutralizing the image so that the whites are the right tint and the lighting is reasonable.
- **Color Grading:** The process of stylizing your image, usually to highlight a specific mood within your scene.
 - Basically, it's giving the image tints after it has been corrected.
 - Examples would be making the images in a dramatic scene more blue or making the images in a romantic scene more red than they were originally shot.
- Many people use these terms interchangeably but make sure to complete any necessary correction before doing any grading.

Picture Styles

- One of the most common steps before doing any color grading is to shoot your scenes with a “flat” picture style.
 - While there are many variations, the basic idea is to turn down in-camera settings such as contrast, sharpness and saturation.
 - The reason it is called flat is because that is how your image will look when it is filmed. It will be dull and will not have the contrast that you're used to seeing but this is normal.
- The standard picture style that DSLR's ship with is not intended to be corrected and therefore makes many decisions for you, often clipping the shadows so that they are pure black.
- If you shoot flat you will have much more room to fine tune your image in post.
- One picture style, called prolost flat, is achieved by simply messing with some settings in your camera.
 - To achieve this, go to the camera menu then select picture style. Change the selection from Standard/Auto to Neutral and then turn down the contrast and saturation (shown below).



- It's that simple. Now your image is ready to be shot with a flat picture style.
- For more on the topic: <http://prolost.com/blog/2012/4/10/prolost-flat.html>

Shoot Flat, Grade Later?

The idea of shooting flat and then grading later has been debated with two sides to the argument:

- **For**
 - More control in post as well as more dynamic range
 - Easier to stylize, easier to acquire more of a film look
 - Details applied in-camera are of poorer quality than what can be done in editing softwares
 - Allows detail to be retained in shadows, which standard styles usually throw away
- **Against**
 - More time spent editing
 - Possibility of adding more noise to the image since it has already been compressed

- Different grading/stylistic choices may look different on different types of monitors, so it's better to get the look you want straight out of the camera

While both of these arguments are correct, it is important to decide for yourself which technique you prefer. Color grading takes a decent amount of time and effort, so don't shoot flat if you do not plan to see the process through.

Color Theory

- Color theory attempts to uncover the reasons that we associate certain colors with certain moods, characteristics and items.
- It is argued that color is a language that helps us navigate the world and make informed decisions about everything that we interact with.
- Color gives us so much subconscious information that it can be used to inflict certain moods on the audience without them even realizing.

More information on color theory:

<http://www.amazon.com/Secret-Language-Color-Science-History/dp/1579129498>

Premiere Pro vs. Speedgrade

Since Adobe is the most common editing suite at the university, I will only refer to Adobe applications. Therefore, I will discuss the two options for color correction/grading, Premiere and Speedgrade.

Adobe Premiere Pro: Premiere Pro allows you to edit and color correct/grade all in one application. Your color effects will be easily accessible within each clip in your timeline. You can also toggle effects on and off to see how your image has changed. The color wheels within Premiere are also easier to work with due to their higher visibility.

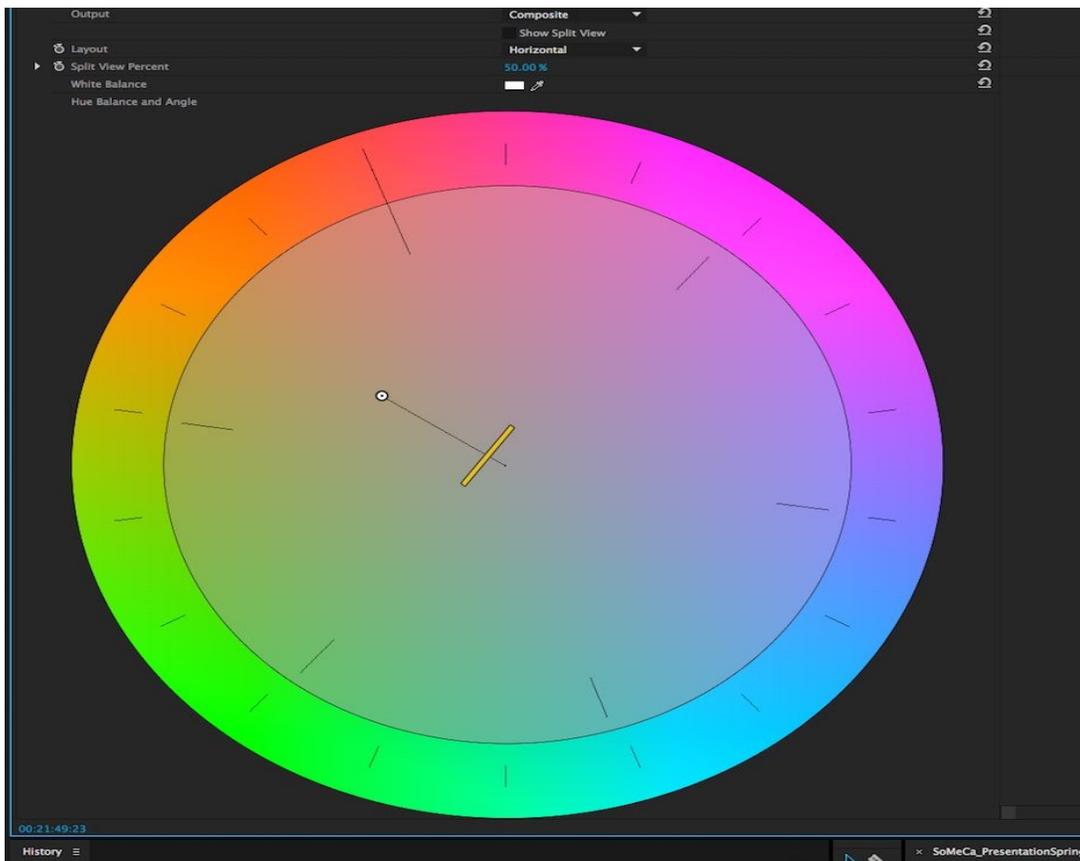
Note: Do not try to match a grade by hand from one shot to another within the same location unless copying the effect does not look right due to a light or color change during production. To avoid this, use the copy/paste function within each application.

- **Three-Way Color Corrector:** This is the best option for color correction/grading within Premiere. The three-way color corrector is meant for both grading and correction.

- Tint: controlled by the Shadows, Highlights and Midtones, separately.
- Luminance (such as adding contrast back to your image): controlled through the input levels slider. On the far left you have your shadows, middle is the midtones and far right is the highlights.
- Increasing the shadows slider will make your shadows darker.
- Decreasing the midtones slider will make your midtones darker.
- Decreasing the highlight slider will make your highlights darker (and vice versa for each direction).
 - The midtones color wheel and luminance slider will always affect the image more than shadows or highlights.
- Saturation levels: these levels can also add to the mood of your shots (dramas tend to have less saturation, dream sequences tend to have more).
- **Side Note:** You can find the Three-Way Color Corrector under the effects panel.



- **Fast Color Corrector:** Similar to Three-Way Color Corrector except there's only one wheel instead of three.
 - The wheel will change the tint of Shadows, Highlights and Midtones upon being pulled.
 - This effect is used more frequently for white balance correction and less so for stylized grading. Virtually the same as the three-way color corrector (all the same rules apply), but with only one wheel instead of three.



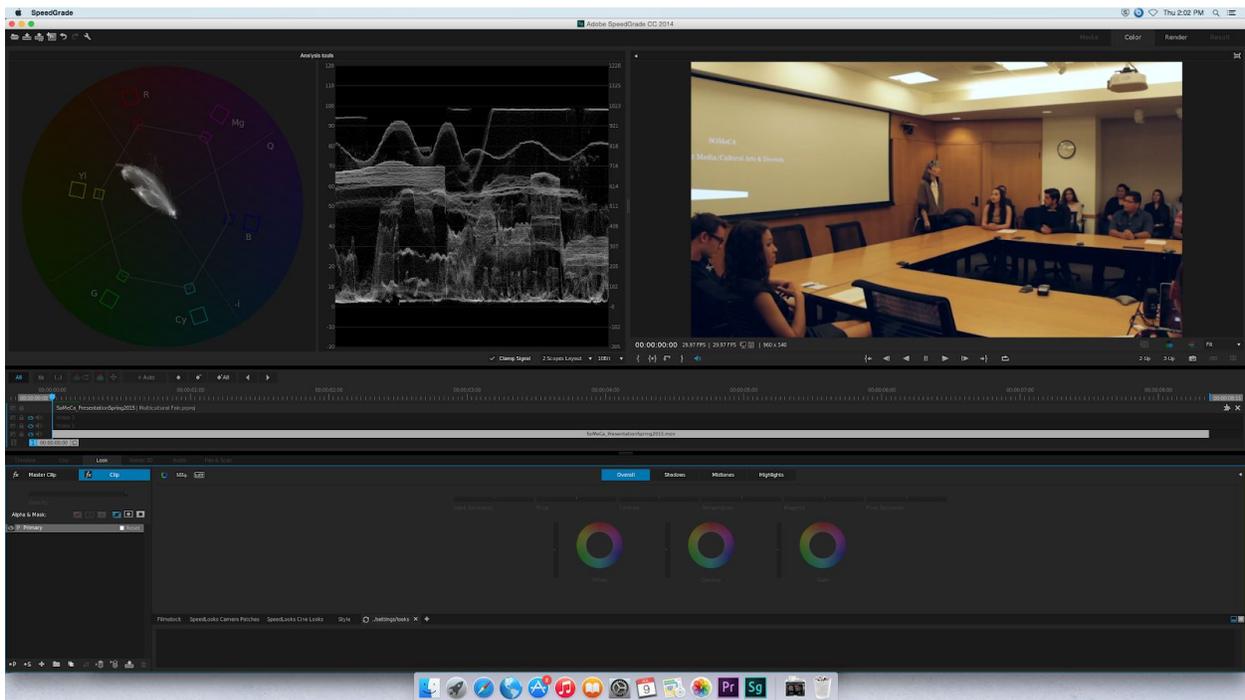
Adobe Speedgrade:

An extremely strong color grading software that has “round trip” capabilities. This means that you can send your Premiere project into Speedgrade without having to export your project or close Premiere.

- You simply click file, direct link to Adobe Speedgrade and it will load your timeline into Speedgrade.
- Speedgrade will give you the three color wheels similar to Premiere, but the whole interface is much less intuitive. Whichever software you choose, I highly

recommend watching multiple Youtube tutorials so that you know how to use the tools and get the most out of each software.

- Though both Premiere Pro and Speedgrade are very similar, Speedgrade has a purely color oriented layout. This means that you cannot cut clips in Speedgrade, all of your clips are locked so you cannot make any timeline changes.
- The entire screen is dedicated to color and lighting control.
- **Bottom Line:** Speedgrade is a much more powerful tool for color correction and color grading, but Premiere Pro has much more diversity in the editing options it offers.



Speedgrade Interface:

- The upper right screen is your preview window, similar to Premiere you can toggle all effects on and off.
- The upper left window houses the analysis tools. These are graphs and charts that show you information about the Chroma and Luminance in your image.
- In this screenshot, I have a vectorscope on the left and waveform on the right.
- The vectorscope helps to show you color tints whereas the waveform tells me where the range of exposure lies. There are others and I recommend watching tutorials on each of them and how they help you color grade.

- The bottom portion of the screenshot shows the control panel with color wheels and luminance sliders. The color wheels work similarly to those in Premiere except they are much less sensitive.
 - Each area also has a luminance slider that is relatively similar to Premiere.
 - Pulling these sliders up will increase brightness in each area and pulling down will decrease brightness.
 - Speedgrade is such an advanced color correction tool that you can mess around with the three color wheels (each shadows, highlights, midtones) individually or overall.
 - This means that you could alter the highlights of your shadows or the shadows of your highlights.
 - You can also add a secondary layer and saturate or desaturate specific colors if need be.
 - For example, if someone is wearing an orange jacket that draws your attention too much, you may want to add a secondary layer and simply desaturate the color orange without changing the rest of the image.

Final Tips:

- Take a minimal approach. Avoid pushing a color wheel too far, which can result in a fake-looking image.
- Always toggle on and off to see if the effect is an improvement over the original clip.
- Be patient. Learning how to use each application takes a while, but remember that you don't need to know every tool and every button.
- To add sharpness back in post, use the unsharp mask. Be very careful with this tool because it can ruin the image if pushed too high.
 - Try no to use more than 120 for the amount (which is still a lot), a radius between 1 and 2, and avoid touching the threshold.
 - If you do use the unsharp mask, do it at the very end of the project because it will increase the time needed to render and export.
- Actively try to notice tints while watching movies and tv shows. This way you can see the effect that each tint adds to the movie as well as observe the specific situations in which colorists use certain colors.
- Film various items/locations and practice coloring them before you commit to shooting an entire project with a flat picture style.
- Film an item with the standard picture style and then a flat style so that you can compare and see the difference.

Links:

Article with tips:

<https://www.hurlbutvisuals.com/blog/2012/01/7-tips-for-hd-color-correction-and-dslr-color-correction/>

Premiere Brightness and Contrast:

<https://www.youtube.com/watch?v=mRWa7UuurY8>

Premiere Color Correction:

<https://www.youtube.com/watch?v=Q3eB4nnkiAw>

Speedgrade:

<https://www.youtube.com/watch?v=5ZWZ5s10cUw>