

Tone control in photography



There are many factors that can influence the tonal quality of your photograph, from the shooting stage right through to post production of the image in both film and digital. A rich range of tones in both colour and black and white photography is very important in the success of the image. The obvious factors that would influence the tones of an image during the shooting process is the lighting as well as the subject reflectance. The type of lighting the photographer uses, whether it is hard lighting, or soft lighting and the size of a light source also affect the tonal range of a scene, the colour quality of the light will also affect the tones of an image.

The subject brightness range is important; this can be defined as the distinction in luminance from the darkest to lightest areas of the image. The photographer would want to get a good range of tones from light to dark without losing details in the lightest and darkest areas of the image. A black subject in comparison to a white subject will have different SBR.

Other factors relevant to the tonal quality of an image during the shooting stage includes the use of the different filters in film and digital, for example a polarizing filter will cut out reflections, but will increase vibrancy and this expands tonal range, where a diffuser would do the opposite because it lessens the contrast. Also it is very important to shoot in digital RAW format, as opposed to Jpeg, because the bit depth used to encode an image also has quite an influence on the tones of a picture. 8 bit (Jpeg) records up to 256 levels of information, where 16 bit (RAW) records up to 65, 536 discrete levels of information, the difference cannot even be compared. Exposure would of course have an effect on the tonal quality of an image because if you over or underexpose an image it will be either too light or too dark and

affect the overall tones of the final image, so exposure accuracy is very important. Other things to look at would be your white balance, one would set the white balance in film and digital to the correct white balance for the lighting conditions you are shooting in, shooting with the incorrect white balance will cause a colour cast which will influence the tones of a picture. In digital when shooting in RAW white balance can be easily corrected in Camera RAW if incorrect. Atmospheric conditions also affect the overall tones of an image, for example you will get different contrast if shooting on a misty day in comparison to a sunny day. A lot of the factors involved in the shooting process apply to both film and digital.

Also flare may occur, this can be defined as unwanted light reflecting within a lens or camera that reduces contrast and creates bright streaks or patterns on the image. In post production digital has many quick and easy editing options in comparison to film which is a more lengthy process. Photoshop has adjustment tools such as levels and curves, hue and saturation, brightness and contrast, unsharp mask as well as dodging and burning in order to enhance tonal quality of the image. The best results come out of editing a 16 bit RAW file. In film there are also options to enhance tones such as different film developers giving different effects, the unsharp mask which was originally designed in film, as well as many other post production techniques, such as colour grading etc. However the disadvantage of film as opposed to digital in post production is the amount of time it takes, as well as mistakes costing money. The photographer should have good knowledge of the zone system to accurately get your results up or down the tone scale, the zone system can be used in both film and digital photography, The zone

system shows you how to work out a personal routine in order to get the best quality out of silver halide film, paper and chemicals in your own working conditions.

You can accurately work up or down the available zones in order to increase or decrease the contrast according to the needs of the subject and image. In digital we expose for the highlights, however with digital sensors underexposure may introduce noise. The presentation and the type of paper used to print on will influence the tonal quality as well, you will get different results from printing in gloss or matt, and also if you frame the print in a glass frame, glass will lessen the contrast and pick up reflections, as well as how the print is lit once on the wall. Tone values, for example sharpness, are one of the most characteristic elements of a photograph. Pre Visualize final print ??“ It is important for the photographer to look at a scene, and pre visualize how he or she would want the final image to look and take the necessary steps to achieve that look. Other factors I will be looking at are Quantum efficiency of digital as opposed to film.

Quantum efficiency can be described in photography as how efficiently light will be captured and converted into a photographic image. Long exposures in digital and film: Both film and digital have their own problems associated when it comes to long exposures. I will start with film, when shooting with a long exposure using film, a big problem associated with this includes reciprocity failure, and this refers to the situation where the aperture/shutter reciprocity trade off no longer works and reciprocity begins to fail when exposure times get long. Corrections are provided with each type of film.

Digital obviously does not have this problem with long exposures (no film) however a common problem experienced with digital cameras and long exposures are noise/grain. Noise can be described as the occurrence of color dots or specks where there should be none. It is possible to reduce noise in post production, especially with CS5 which has noise reduction in camera raw, where there are three sliders, namely Luminance, Luminance detail, Luminous contrast, colour and colour detail.

These sliders can be manipulated for the best noise reducing results. However, in digital it is convenient when dealing with long exposures because one can check the results on the LCD screen immediately and see where problematic areas of the image are, where in film you would have to wait until the dark room process. An important difference in film and digital when it comes to very long exposures include battery life, the battery will run out quickly with long exposures in digital where you wouldn't have this problem with film. There are many controls as mentioned in factors that influence tonal quality that the photographer can make use of when exercising control over the tonal quality of an image in photography. In digital a big advantage is Photoshop where you can correct a lot adjust the Levels, Curves and brightness and contrast which will influence the final image, however it is important to do as much possible in the shooting stage to ensure a good tonal range, because Photoshop can enhance, but not create. That is why in both film and digital it is of great importance to get your exposure correct, because incorrect exposure will often lead to blown out highlights and loss of detail.

HDR is also an option where you take three exposures, one correctly exposed, and one over exposed and one under expose and join them in the post production process in order to achieve great tonal results. There are also different techniques in film when it comes to improving tones in post production, for example using different film developers for different effects, however post production in film as opposed to digital is a much more time consuming process. Like mentioned in the factors influencing tone control, the photographer can take control in the shooting and post production process in order to have control over the tones in the final image. To start off with it would be recommended to shoot in RAW format, this format records up to 65, 536 discrete levels of information and you will be able to edit the file in 16 bit. Next would be setting a custom white balance to ensure accurate colour and avoid colour casts which will affect the tonal quality of an image. It would also be advisable to use a light meter in order to accurately measure exposure and avoid blown out areas.

An accurate light reading will enable the photographer to hold detail in the lightest and darkest areas thus maintaining a good tonal variation, and also make use of the previously discussed zone system. Take into consideration atmospheric conditions and how this will affect the tones of the image. Also make sure the lens is clean and in good condition to avoid any loss of tones and contrast due to dirt marks or oil stains. Making use of a lens hood will help reduce flare if any is occurring. Use of filters for desired affects will also influence tones as mentioned earlier.

A disadvantage in digital is that highlights abruptly clip as soon as anything hits white. Unlike film there is no graduation to white Also how you present

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the final image will influence the appearance of the tones, for example, if you frame the print in a glass frame, the glass will lessen the contrast and pick up reflections and ultimately take away from the image. Advantages and disadvantages of film and digital: I have included some very brief general advantages and disadvantages of film and digital. Film: Advantages:??? Image quality: A glass plate from 1880 still has more resolution than a canon 1Ds Mark 2.??? Film is future proof: Scanners keep getting better, film shot today will scan better tomorrow. Where digital is stuck on the quality it was shot. ??? Dynamic Range: Film is much better at recording highlights??? Film records a broader range of colour??? Film has no problem with double exposures??? Permanence ??“ Film does not become unreadable, it does not erase.??? Long exposures ??“ Besides reciprocity issues, film can handle long exposures and give the same image quality as a normal shot.

??? Cost of equipment is a lot cheaper than digitalDisadvantages:??? Colour film fades ??? Storage space can become an issue??? Difficult to backup??? Cost ??“ you pay as you goDigital: Advantages:??? Image quality, no grain??? Workflow speed is fast??? It is possible to make multiple backup of files??? You can see your results on the camera in the shooting stage??? Shooting cost nothing??? Many post production techniques availableDisadvantages:??? Highlight rendition, Problem with highlight reproduction especially when shooting into the sun??? Exposure is more critical than film??? Loss of work due to technical issues??? Equipment is very expensiveIn conclusion, the photographer has many controls available in both film and digital from pre-visualization, to the shooting process, to the

post production process to the presentation of the print in order to obtain the best results in tonal quality of images. It is up to the photographer to make use of these controls correctly in order to produce a successful image, and it will be up to the photographer to look at what type of image needs to be produced, and whether film or digital will be more suitable for the task. However, digital does have a large advantage to film which is quick post production techniques which increases workflow as well as being able to see results right away. Reference List: Books: Langford??™'s Advanced Photography.

By Efthimia Bilissi, Michael Langford. 8th Edition. Focal Press. 2011 Websites: <http://www.kenrockwell.com/tech/filmdig.htm><http://edkphoto.wordpress.com/2010/03/03/potential-long-exposure-problems/><http://www.dpreview.com/learn//key=noise>http://www.normankoren.com/digital_tonality.html