USING AND CONTROLLING LIGHT

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Photography is often called "Painting with Light". Perhaps it could be called recording the "Magic of Light", as it is light in its many forms that is the basis of all photography. No light - no photograph, is the basis of all photography. Without light photography would not exist - it is that fundamental.
Conversely, the better the quality of the light, the better the quality of the image.
The challenge to the photographer is twofold - firstly to recognise quality lighting, and, secondly, to capture it on film.
This dissertation is concerned mainly with recognising the various types of light and how to use this knowledge to take better photographs.

1) Sources of light

There are two sources of light available to the photographer:
Natural Light – Daylight Artificial - Flash or incandescent.
Natural, or daylight, is the lighting most used by the photographer, and it is the one that is the most variable. Daylight film, the one almost universally used by the amateur photographer, is balanced for midday light - that is a colour temperature of 5500K. (Tungsten or incandescent light on the other hand, has a colour temperature of approximately 2700K, giving a warmer quality of light).

However, the colour temperature, and indeed, the quality of the light will vary during the day, depending on the weather and the time of the day. At dawn and dusk, for example, the colour temperature of the light will be much warmer than the middle of the day, giving rise to the warmer colours typical of sunrise and sunset. The human eye tends not to register the subtle colour temperature changes of light but film tends to be more literal and records the subtle colour temperature changes in light more faithfully. The skill of a good photographer is in being able to recognise these subtle lighting changes and using them to maximum effect in his or her images.

Artificial light, on the other hand, is more constant in colour temperature, although this will vary, depending on the light source. For instance, flashlight is balanced to the standard daylight colour temperature of 5500K whilst most forms of incandescent or tungsten light will have a much lower colour temperature, typically around the 2800K level, giving a much warmer colour balance to the photographic image. Artificial light, in not being subject to a daily time cycle or the vagaries of the weather, will remain constant in colour temperature during use.

2) Use of light

The true art of photography is the ability to sense the optimum lighting condition for the image and to capture it on film. In the case of daylight with the ever-changing weather patterns and time of day it follows that certain times of the day and certain lighting conditions will suit the particular requirements of any given image. Generally, the lighting conditions that typically prevail at the start and the end of the day will be more suitable for most aspects of outdoor photography, whilst, that typically prevailing around the middle of the day, will be less suitable for general outdoor photography. This is because morning and evening light is usually warmer and has a softer feel than that of midday light, which tends to be cooler and harsher in nature.

Whilst daylight film is balanced for the colour temperature of midday light and thus will give a literal interpretation and colour balance of that time of day, the warmer and softer lighting of the first and last two hours of the day will generally give a more pleasing result. Similarly, the longer shadows thrown by the low light will give a more dramatic feel to the image.

In the case of artificial light, the more portable nature of the light source will facilitate variation to the quality and direction of the light source, although the limited strength of most artificial light sources will limit its use in the main to studio and small scale outdoor photography.

3) Direction of light

The direction from which the light is coming will have a large effect on the image.

Front lighting, or that light which is coming from behind the photographer and hitting the subject front on, is the least interesting. Because it hits the subject front on it does not throw a shadow and tends to flatten out any texture. As a result, it tends to be harsh and uninteresting.

Side lighting on the other hand, as it comes from the side of the photographer and hits the subject obliquely tends to be much more interesting and tends to show texture and detail in the subject, creating a much more dramatic and interesting image.

Back lighting, or contre jour lighting, is the most dramatic of all lighting. It is lighting that comes from in front of the photographer and hits the subject from behind. It typically leaves the front of the subject in shadow, which may need to be modified by the use of reflectors or fill in flash, but can give dramatic rim lighting or a halo effect around the perimeter of the subject. Best effects will often
be achieved in low light conditions when the quality of light will enhance the inherent drama of this type of lighting.

4) Weather conditions

The weather conditions will have a major effect on the lighting available. The quality of light will vary depending on whether the day is fine, partly cloudy or overcast. A bright sunny day will give a well-lit image but will cause deep shadows, which may give too large a contrast for the film to comfortably handle. Whilst in certain types of photography this may give a dramatic effect, in others, such as portraiture, this contrast may be too great for comfort.

Partly cloudy weather will usually give more interesting lighting, particularly where dramatic images are required. The contrast between the sunlit and shade areas can often be used to good dramatic effect.
Many of the best landscape photographs have been produced in such conditions, particularly in low light and stormy weather conditions.
Cloudy weather will produce a flat light condition with little or no contrast. This type of lighting, whilst the least dramatic, is ideal for detail type photography or portraiture where control of contrast is important.

5) Control of light
Outdoors you are in the hands of the weather and generally, you will have little control of the lighting, except for small-scale photography such as portraiture and close up work, where either flash of reflectors may be used to modify the ambient lighting. Indoors, you will have more control of the lighting source, be it flash, tungsten or window light. In the case of the first two, you will usually be able to move the light source around and experiment with different directions and strengths of lighting, even using multiple light sources and reflectors. More detail on this subject is handled in a later lecture.
Outdoors, consider the use of reflectors to modify lighting in portraiture and close up work, or, on the grander scale, look for natural reflectors such as walls, buildings, beaches, snow, etc, to reflect light back onto your subject.

6) Measuring light
Most cameras have an in built exposure meter used for measuring the light intensity. Various metering patterns and types are available, some subject to much hype about their efficacy. All on camera meters are reflected light meters, which measure the light, reflected off the subject and are calibrated to a standard value of 18% reflectance, i.e. the light reflected off a mid toned grey card. This happens to be a light value exactly half way between light reflected off a white surface and that reflected off a black surface, with the difference between the white and black surfaces being a full four f stops.
Thus, it follows that light reflected off any subject will be affected by the colour of the surface from which it is reflected and that a reflected light meter will give a different reading, depending on the colour of the subject matter it is reading off. Whilst some of the more sophisticated meters take multiple readings across the whole subject to give an average reading they are still subject to 18% grey calibration and may well give a false reading, particularly where the overall subject is lighter or darker toned than average. Be very careful when metering your subject - try to meter off a mid tone, or use a grey card if in doubt.
Should you have a spot meter on your camera you may find it more useful than a matrix, or averaging type of meter, as it may enable you to get a more accurate reading off a part of the scene that is close to an 18% reflectance value.
On camera meters should be treated as a guide only and the photographer should place his or her own interpretation on the reading indicated, based on experience in past, similar lighting conditions. Accurate exposure control is essential to creative photography and interpreting the interplay between light and shade. It’s called creative input but really, the photographer’s input is often the difference between an average image and a great one.

Remember, leaving the camera to give an average reading will result in an average image - tweaking the exposure through intelligent input from the photographer may well result in an exceptional image. Brainpower beats machinery every time! That's art!

7) Summary

A photographer must learn to recognise the various qualities of light and know how to manipulate it to his or her advantage. Exceptional images result from observing the effect of varying light patterns on the subject and being able to use or manipulate the lighting to his or her advantage.

Learn to "see" the light, its qualities, and how it falls on the subject and how by varying the intensity and direction the quality of the image can be enhanced. It is arguably the best tool a photographer has to enhance the image - sometimes subtle changes can materially improve the result.

If you feel it is not right, alter it, if you can, or come back at another time when you feel it will be better. A painter can alter his image at a stroke of a brush but a photographer must make do with the shape and form of the image before his or her eyes. A little alteration or enhancement of the lighting is one of the few tools available to the photographer to improve the final image and lift it from a factual statement to something approaching art.

Above all, develop a "feel" for light - photography at its highest level is an interpretative art and owes more to intuition and feel than sheer technical ability. Become a photographic magician and learn to manipulate light to you own artistic advantage.

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