

The Art of Photography

Learning Log

Self Study Research

A History of Photography, How Film was made, the Art of Photography and Styles.

The digital age is upon us and film Cameras are being produced less and less. The days of dry to dry processing is numbered and no longer do photographers have to wait for hours, days or possibly weeks for the results of their picture taking. In fact photography in the digital age has made so many advances that almost all picture taking is pretty much instantaneous.

This is great if you want a handy camera and like taking pictures without wanting to know anything about the mechanics or even compositional techniques. The user of cameras in this way will get stunning results as well. In my view there is nothing wrong with the so called 'point and shoot' approach. It's all personal preference.

What though if you do want to know more about photography? What if you become fed up with results that all appear the same with the more point and shoot style? What if you decide that some pictures may look better if they had more saturated colour? Do you want pictures that vary the lightness and darkness in a scene? If only I could have got closer or nearer to the subject?

These questions are just some that led me to understand more about the history of Photography and its importance including an understanding of the way film was made and what it was comprised of.

I'm going to start with the brief changes and differences of photography over the years, from its origins. I will describe the progression from optical and chemical process to Plate cameras through Film and onto modern digital technology. Finally looking at some advantages of digital photography and contrast these to some disadvantages that we have discovered.

Differences in Headlines

- The origins of photography are some 400 plus years old. Both the English and the French claim its origins.
- Development of the Optical process.
- Development of the chemical process.
- Came together and plates were placed into the camera to record images.
- The plastic coated film with George Eastman with the Eastman Kodak firm then brought the process to the many with the slogan "You press the button, we do the rest!"
- The Box Brownie that took 100 pictures per film caused the industry to boom and cameras were mass produced.
- Advances in Film were developed further by other notable companies in the business including Kodak, Fuji and Ilford. Transparency film for overhead projection, for example.

- Then came digital technology and gradually film is becoming a thing of the past.

Research – History into Film

As you can see from the headlines above Photography has more over evolved rather than just being invented. There were advances by some in the chemical processes and others in optical improvement. Even today the two seem detached and come together as part of team to make further developments in camera technology.

Here are some of the important steps I have discovered that happened over the last 400 years.

In 1519 the camera obscurer was drawn by Leonardo da Vinci and its use was described by itself as a drawing aid.

During the 16 hundreds chemical reactions were recorded by Robert Boyle regarding Silver Chloride.

Later in the 17 hundreds Angelo Sala noticed that silver nitrate powder was darkened by sunlight.

These discoveries of chemical processes combined with the knowledge of the optical process (camera obscurer) came together in the 18 hundreds when the first images were then recorded.

The work of Joseph Niepce and Luis Daguerre in the early 1800's were definitely instrumental in the production of early images that we now know as photography, however, its name came down to another called Sir John Herschel in 1839. This was the same year that in August the French, after buying the rights made the process public. Named by Daguerre as the Daguerreotype its popularity grew rapidly.

The developments continued with Fox Talbot and Frederick Archer to name but a few. Frederick Archer was also key with Ansel Adams in understanding and developing the 'zone system', a method of seeing 11 tones from black to white through the grey tones. This later went on to affect the accurate recording of exposures on film by cameras.

Then in 1884 it was George Eastman and the celluloid backed film that brought photography to the many with the Eastman Kodak box Brownie.

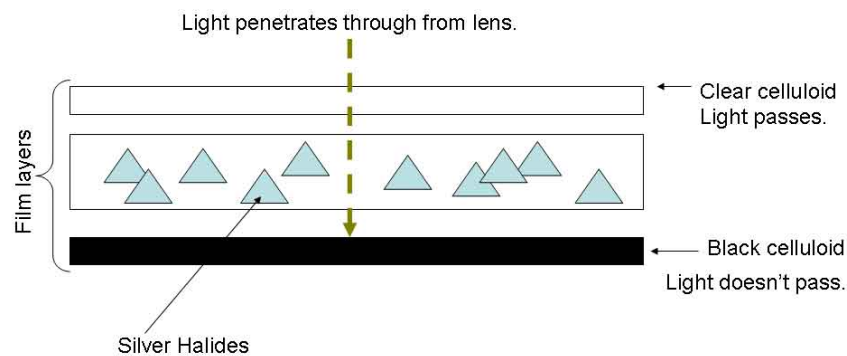
The films were clever, a top coat, a transparent thin plastic coating. In the centre suspended in a gelatine emulsion were Silver Halides or crystals that react to light, hence the importance above in the chemical discoveries back in the 16 and 17 hundreds. The more the halide crystals are exposed to light the more black they become.

During the developing (chemical) process, crystals that are not affected by light become washed away and after fixing to make the film permanent the result given is what became known as a negative. In other words areas in the negative that were clear

(or appear white) would be black by the time the image was transposed again onto light sensitive paper via the use of an enlarger in a dark room and visa versa the black would become white on the print.

The sensitivity of the halides allowed a range to be captured in an image from dark or black to white through a number of shades of grey. The middle of the greys is often used to base exposures on. It is known as a mid tone grey – an important concept to grasp because it is still used in cameras today and is something to train your eye to look out for in a scene. It is also now used in the digital darkroom on computers where users of development software can see a histogram of tones from light to dark.

Black and white film diagram:



As can be seen the chemicals are retained in gelatine in the central area of the film represented by the blue triangles. There is a clear celluloid film over the top and a black celluloid one at the base, which also acts to strengthen the film.

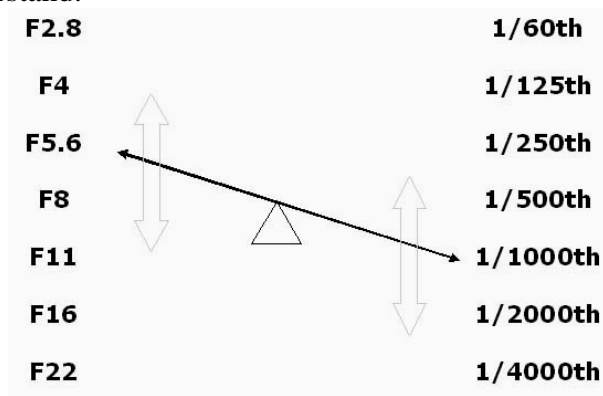
If you measure the light in a scene from a mid tone and then set your camera accordingly, then you should get a well exposed image with highlights that are recorded and detail also recorded at the shadow end.

To describe this in a little more detail a user of cameras needs to understand about the use of apertures and shutter speeds in correlation with film speed (a films sensitivity to light). That sounds very complicated when in reality it isn't.

In any scene you are about to photograph with a camera that has the ability to alter the aperture, shutter speed and film sensitivity, the photographer just needs to understand these settings correlate like a seesaw and that their primary reasons for existence are to alter the appearance of the image in terms of sharpness from front to back in any given scene or the amount of grain you wish to see and subsequently the size the image could be printed at before it breaks up in clarity.

The first of these is aperture and if you want a sharp image from front to back in the scene you are more likely going to want a small opening in the lens, an F stop of F22 for example. If you want to isolate your subject and blur the background then F5.6 a wider aperture would be more desirable.

Taking these factors in to account the following diagram may make this instantly visual to understand:



The F number is the size of the aperture in the lens and the 1/60th to 1/4000th are typical shutter speeds on camera. Let's say our film has a sensitivity of ISO400 and the camera meter gives us 1/1000th second at F5.6 from a mid tone grey, as shown. It means that to achieve the same exposure all I have to do is move the seesaw up or down and read off the correlating figure. So if I want F11 the shutter speed would be 1/250th second.

If you change either column with the ISO film speed rating or digital ISO rating the same would apply.

Colour Film

Colour film was a later advancement and its use added and extra depth to imagery not only artistically by scientifically as well. Kodak state that they have discovered recent archive of tests on colour film as early as 1922, some 13 years before the first full length colour film.

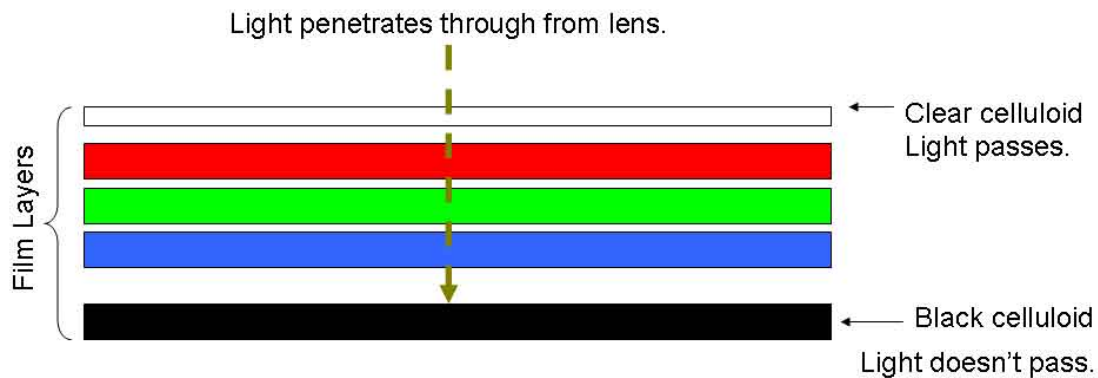
In colour negatives instead of the halides being sensitive to light there were layers developed so that the chemicals, through a similar process could react to light and record primary colours in each layer.

Later 'transparencies' added more value to the industry because the celluloid backing on the film (as in the diagram of black and white above) could be washed away during the chemical developing process and therefore the image became a positive instead of a negative. It was discovered that for reproduction in magazines and large posters that the transparency was a better median for printers.

Naturally there were refinements in the chemicals used for film so that the light sensitive crystals inside the film were varied in their sensitivity to light.

A range became available from 100 ASA being slow through to 6800ASA being ultra fast. The latter being ultra sensitive to light meaning faster exposures/ shutter speeds and visa versa for 100ASA where shutter speeds would need to be longer to achieve the same exposure. It was the slower speeds though including Kodak's 64ASA that gave the media the tool they needed. Some stock libraries and other areas of the trade insisted on it as the crystals inside these films were less obvious when the picture was enlarged. Therefore pictures could be used in wider application, more marketable.

Colour Film diagram:



Here we have a diagram of later colour film which in today's digital imagery still plays an important part to understand what the camera is doing.

There was still the top coat of clear plastic but then instead of one layer of crystals that were sensitive to light there were three layers of Red Green and Blue.

In other words the primary colours in the visible light spectrum.

Behind the layers is black celluloid backing where the light stops (or is absorbed). This layer is flexible and gives film its ability to roll up whilst remaining durable.

It will come as no surprise that today's cameras have a means to record light by way of an array of colour sensitive pixels in a light sensor similar to the diagram above. Reds, Greens and Blues are all captured on each pixel as the light passes down over them and is recorded electronically. At each pixel the brightness and saturation is also recorded.

Depending on the resolution of your camera you could have 22 million (22 mega pixels), or possibly more now, of these tiny specs (pixels) working in each shot. The average camera now has in the region of 9 million pixels or mega pixels as it is known, this is the cameras resolution. Hence it is important to understand what film was made up of as its function is very much replicated in the modern electronic process that will inevitably replace the chemical. Where in film speeds the faster the ASA/ISO the more grain appeared in the print, with today's digital ASA more noise is recorded in similar style or appearance.

Today, however, once the image is digitally recorded it can be reproduced within your computer after each file in the camera has been transferred there.

Advantages of digital over film

- Viewing images as they are taken means exposure can be checked and composition.
- Deletion of unwanted pictures.
- Cost.
- Retaking images without having to return to the scene.
- Editing.
- Health due to lack of chemicals.
- You can take more pictures than on film.

There are some obvious advantages over film. Some that if I had found them in the

1990's I would have become a full time photographer then.

For instance the ability to view images straight away after their capture would determine whether a photo shoot had been successful rather than awaiting the results which could add stress to any photographer's life.

No more need to spend hundreds of pounds on buying film and the processing costs at the developers.

There is no need to wait until a film is developed (that could be weeks) before reviewing the pictures and seeing that you have to return to your scene to start again.

In years gone by editing in the dark room was a time consuming and often a tricky task. Get it wrong and your original images can be lost for ever if the wrong chemical was applied to the development!

There are health benefits because in a poorly ventilated dark room you were at risk of inhaling toxic fumes from the developing chemicals. Skin was also likely to become irritated and in some cases it may have caused dermatitis.

Finally depending on the size of the memory card you are using and the quality of the image size you are recording then you could take up to 1000 or so images on one memory card – verses the 36 on a roll of film!

Some Disadvantages

- Printing costs can be high.
- Moving images can be hard to record.
- Sharpness of images can often be poor.
- High resolution cameras can be expensive.
- Dust !

Some of today's modern computer printers can have very expensive ink cartridges and not only that, they can often run dry very quickly.

We have noticed that with some compact digital cameras where the resolution is low and where the shutter and aperture is fixed; that capturing fast moving subjects is tricky especially in lower light situations.

All digital cameras when pushed in low light or when using slower shutter speeds often suffer as the images can have a softer edge to the subject outlines.

Whilst film and developing costs mentioned earlier could add up significantly to buy a top of the range digital camera costs thousands as an initial outlay.

DUST – the digital enemy! Get dust onto the sensors of a digital SLR camera (one with interchangeable lenses) and you are heading for time consuming editing!

The Art of Photography

This side of the Photography is a subject that I find a fascinating one that rounds off this, my general overview of photography, the picture itself.

There have been so many different approaches to art in photography over the years and some very interesting developments. What I mean by that is the attitudes of practitioners along the way and their attempts to almost dominate the subject with the formation of select groups as well. It is interesting in light of a human's unwillingness to let others into their territory or comfort zones. If truth be known we

accept that change sometimes offers exciting opportunity. Whilst going though it though, it makes us unsettled and for the less brave fearsome!

Some Artists that were alive as art changed to include photography, scorned the use of cameras, yet their influence has also affected the design of images today. Some artists would possibly still argue that photography simply is not art.

I think that studying pioneers and their styles, rising above the arguments over whether or not it is an art, is a must to become an accomplished photographer in today's world. Whether it is or is not an art, both painting and drawing play a huge part of composition in photography.

Understanding some techniques in composition allows the development of an individual's style and their approach to the subjects that they photograph.

A visit to art museums and galleries after gaining an idea of composition technique can be a fascinating and rewarding exercise.

I recently made a specific visit to the Louvre in Paris recently after studying many of the projects in the Open College of the Arts Art of Photography course. I wanted to see how many of the ideas in the elements of design had come about through painting and other art.

Studying some of these historic paintings revealed very quickly how compositional rules have stuck and been applied in photography.

The first image that I saw which struck an immediate resemblance to the course material of project 19 page 117 with the image of the virgin looking at the priest was that of a painting by Geurchin - La Resurrection de Lazare. Both have strong diagonal leading lines that create pull between the main elements within their frames.

Another composition technique I saw was that of the work by Caravaggio, the painting of La Diseuse de bonne aventure 1595 to 1598. This painting depicts two characters, a young male and female who appear attracted. The presence and size of the characters in the frame make their heads two distinct points. Their eyes, looking into each other make a clear relationship between the two distinct points. Maybe not a fantastic example but it certainly demonstrates the points being made in the course notes on page 104 of project 18.

Project 10 and 11 demonstrates and describes balance in images, in the Louvre are many examples of this, but the one that stood out for me was that of the painting opposite the famous Mona Lisa named Les Noces de Cana by Veronese. Here a street scene of Venise 1562 to 1563, shows the pillars of tall buildings either side of a gathering of people on the street and a horizontal raised balustrade central frame.

Finally another painting by Carpaccio entitled La Prediction de Saint Etienne a Jerusalem, shows the golden section really well and endorses project 13. This painting was made in 1514.

I have not added any of the pictures from the Louvre to this work for fear of copyright infringement, but next is a link to the main web site where you can browse to see some of the compositional techniques used by both photographers and painters alike.

The Louvre:

<http://www.louvre.fr/llv/commun/home.jsp>

Styles in Photography

There have been so many famous photographers over the years and much of their success appears to be centred on their involvement and interaction with the subject they are taking. Sometimes the level of detail captured and the care of the subject combined with an awareness of its place in time or the environment.

For example Henry Emerson and his pictures of Norfolk, Edward Weston in California and Ansel Adams with his pictures of the Rockies.

Style is personal to the photographer; we all like different methods of producing images, from the more surrealist and abstract images to the realist with straight a pure photographic elements of design. Some prefer to evoke mood and others like the spontaneity of digital point and shoot giving instantaneous interaction with scenes they want to record as a memoire.

For my own style I have think I have yet to fully understand it, to help me towards this I have created a list of my likes in my log book for this course which I intend to reflect on as I progress:

- Aperture Priority
- Less grain and lower ISO settings (less noise)
- Planning shots and research
- Wildlife shots
- Land and seascapes
- Some small commercial assignments
- Still life
- Nikon equipment for familiarity
- Long time exposures
- Realist images in the main but pictorialist where slow approach time allows
- Polarising and Neutral Density filtration
- Tripods and cable release
- Images taken across all of the focal lengths appeal to me, I have no favourite
- Assignment 3 and section 4 on colour has given me a huge insight into emphasis on colour, its use in composition and balance. Colour harmony, cool and warm temperatures. All of this is something I can now add to my style and will seek to do.
- Compositional techniques I like and by looking through the lens when out photographing I will continue to try and apply many of these new methods.

- I like cropping, often I can see many images that at the time of taking I had missed
- Studying books and magazines for examples of work
- Symmetry I now have as something in mind when photographing subjects. Furthermore at post processing for a square format image
- I like to be able to react to what is around me more than waiting for the lighting to be right, albeit the projects on Natural light have given me the understanding to wait until the right moment where shadows may fall and the light quality change, where time allows
- I respect the privacy of others and tend not to like photographing people in the street. As I deal with people more for a living today, I tend to shy away from them with my photography
- I like vision as a sense, strong eyesight is important to me and blindness scares me
- I like looking for shots everywhere I go, often I will return to landscape sites when time allows
- I like shots in to bright sunlight for strong silhouettes
- Diagonals and implied lines and excellent for creating pull and movement in images respectively and I always look for this
- I like contrast in images but sometimes a bold image with less can be impactful
- I like good colour saturation but not overdone

I am sure that over the coming few months my continued studies into photography will change some of the list above, or add to it.

Overall I like the use of photography as a median to capture the realist view but with a combination of art elements of design.

Perspective was something my mother Jean Milburn Burton, would teach me about when I was small. She was a good artist and painter with small works having been exhibited in the Tate Gallery in London. Her specialism was watercolour and aspects of her style were to capture flowers close up. She had this quality to be at one with the subject and to see intricate detail. Her approach was much slower and more considered than my more instantaneous interaction.

In time I believe that my behaviour towards subjects will change to begin with in the course the interaction was instantaneous and I was not experimenting much with the camera equipment I had. My tutor pointed this out and helped with advice on other things to do, changing viewpoint for example.

Here before advice



Here post advice where I returned to improve and experiment



The image was taken with a wide focal length rather than the telephoto above. The diagonals produce more movement than the flat image above. All in all the colours are sumptuous and the white balance set to Auto has neutralised some of the effects of the fluorescent lighting.

In Conclusion

With every wave of learning as I undertake each project and given time, my style will change and my technique will improve. The more I continue to study the pioneers and famous noted photographers of the past; the more I monitor my style, then the more I will be able to communicate through this median.

To tell a story or an illustration, to evoke mood or show involvement with an environment, this course with the OCA has assisted me not only with learning some of the basics in photography but my photographic understanding as a whole.

