**Two Unique Ways to Freeze a Moment in Time**

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**Abstract**

Living in the modern world, a person is constantly flooded with images, whether that be photos for advertisement, or photos as artwork, or photos they have taken. Photography has come a long way since the first camera. The two main ways of taking a photo are by using a film camera or a digital camera. Both styles of cameras have their benefits and their drawbacks, and they both add something unique to the finished product. The first part of the paper is an exploration of the difference between film and digital photography, and the strengths and weakness of both styles.

 With the advancement in photo manipulation technology, it has become easier to spread false ideas and lies about a variety of subject matter, with the biggest being the concept of the ideal body image. With so many images constantly being shown to any one person, it can become easy to believe the lies that the photo is telling. As Christians, it is important to take time and reflect on what is actually true in a photo and what is the lie that they are being sold. With this discernment, Christians can prevent their faith from stumbling and help those who have bought into the lies told through photos.

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**Introduction**

Photography has the ability to freeze any moment in time to hold onto for as long as that person shall live. Photography is a way to store memories so that in old age, there is something to look back on as one is rocking back and forth in their rocking chair. Photography also has the power to spread lies to millions of consumers, in order to sell what the consumer does not even know they need. It is these lies that can be harmful to someone and their esteem and wallet. While photography can be a great way to create art and store memories, whether that is through film or digital photography, it is important for a Christian to know how a photo is manipulated to know the lies that it can be telling the viewer.

**Process of Capturing and Printing a Photo (no manipulation)**

To understand the way that film and digital photography can be manipulated, it is important to know the process that is necessary for each to capture a moment in time and get that photo all the way to a print for someone to hold and display.

**Basics of Photography**

The basics of photography are the same whether it is being taken on a film camera or a digital camera. The important part is to get the exposure correct so that the photo is not too dark or light. To achieve the right exposure it becomes a balancing game between the shutter speed and the aperture of the lens. A good rule to base exposure off of is the Sunny 16 rule. This rule says that at an aperture of 1/16, the shutter speed would be one over the ISO of the camera. This creates a perfectly exposed photo on a sunny day.

If the day is not sunny, or the photographer is indoors than adjustments are made accordingly. If more light is needed then the shutter speed needs to be slowed down or the aperture needs to be opened. Adjustments are made if the photographer wants either a shallow depth of focus or a deep depth of focus as well. To get a hang of it requires lots of practice to know what the right exposure for each lighting situation is. (London, 20-23)

Another aspect of photography is composition. While the composition is based more of personal taste there are some basic rules that go along that are generally followed. The biggest one is the rule of thirds, where the main subject is placed slightly off center to help keep the eye moving throughout the entirety of the photo. It also gives it more of a punch than just putting the subject in the middle of the photo. Most everything else that takes part in a composition is up for the photographer to decide how they desire to frame their subject.

**Film Photography**

The first form of photography came in the form of film. The concept was that light would bounce into the shutter of the camera and hit the negative. The negative was placed in a light safe container to prevent other light from hitting and exposing the negative. The areas that are darker in the real world, like a clock tower, would be white on the negative because there would be less light reflected from the object. The lighter the object, the darker the negative would become because more light would hit the surface of the negative.

Once the light reflected onto the negative, it is time to develop the negative to make the print. When loading and removing the negative from the camera, it is important to do it in a completely dark room. Because the negative is light sensitive, any light can affect the negative and ruin your picture. When the negative is out of the camera, it gets rolled onto a reel and placed in a light safe container. All of this is done in the dark and once it is in the container, the lights can be turned back on.

The next step is to develop the negative to see what you have actually taken a picture of. The first is to add developer. The developer is used to make the whites and blacks of the negative. It makes the blacks blacker the longer it is in there. It normally takes ten minutes in sixty-eight-degree solution. Once the developer is in the container, it takes agitation every thirty seconds to mix it up the solution and to make sure the negatives are being developed fully and equally.

The next step is to dump out the developer for it is a one time use deal. Once the developer is gone, the next is to add the stop bath. The point of the stop bath is to stop the negatives from developing further to keep them from going all black. This is a quick thirty seconds of constant agitation. After that thirty seconds, the stop bath can be poured back in the container for it can be reused for several rolls of film.

After the stop bath, the fixer is poured into the container. The fixer makes the negative no longer light sensitive. This way the negative can be viewed in normal light and the light will no longer effect it. It takes anywhere between three minutes to seven minutes in the fixer. This number is dependent on the type of fixer and how much it has been used because it is one of the chemicals that can be reused multiple times. The nice thing about the fixer is that if it didn't get fixed all the way, the negative can be dropped back in the fixer to finish the process if need be, however, it is not recommended to make a habit of it.

The last step is the rinse off the chemicals. This takes five minutes of washing the film in the container. Then one drop of photoflo is added to clean the paper and to make sure the water doesn't stick to it. Lastly is a quick rinse under the distilled water, and then it is time to unroll the negatives from the reel and hang them up to dry. It takes about one hour of allowing the negative to air dry before it is ready to make prints. (London, 81-86)

That negative once it is developed can have light shown through it onto a light sensitive paper and produce the image that was captured in black and white. The white areas that were on the negative would become dark on the paper because the light would hit that part of the paper. The darker the area on the negative, the whiter that area would turn out on the final print.

The first step is to make a contact sheet. A contact sheet is where the negatives are laid on a sheet of photo paper under a piece of glass. This allows the photographer to see the photos as positives instead of negatives, as well as figure out how much light is going to be needed to properly expose the print. (London, 98)

Once the contact sheet is made, it goes through the same process as the negatives through the developer, stop bath, fixer and rinse. The times are different for the developer for it only needs to be in there for two minutes. The prints also don't need to be ran under photoflo and distilled water, regular water will work just fine.

After the contact sheet is made, the next step is to choose a negative you want to actually make a print of and print it. The negative goes into a negative holder and placed in an enlarger. This takes the 35 mm film and enlarges it to be the size that you desire. The paper is laid under the light, and exposed for the same amount of time as the contact sheet. Then it goes through the same cycle to develop the print, and after that dries, there is now one final print. (London, 104-107)

**Digital Photography**

In contrast to film photography, there is digital photography. Digital photography is where the light hits a sensor in the camera, and the camera turns the sensor readings into data that is stored in a memory card and can be recalled later on a computer. There are two main ways in storing the data, jpeg and raw. A jpeg file compresses the image to make a smaller file so some of the data get lost, which makes it harder to edit. A raw file is a larger file for all the data is preserved which is great for editing later. However, when the photo is sent off to the printer, it is sent in jpeg form.

**Difference between Film and Digital Photography**

There are significantly fewer steps for digital photography in getting the picture from the moment it was taken to the printed form, without any manipulation. It takes less time, for the whole process of taking the picture to printing it can take as short as thirty minutes to get a finished product. For film photography, there are more steps involved, all of which takes more time to accomplish. It can take around two hours from the moment the photo is captured to the final print. If time is a constraint for a project, it would be better to go with a digital approach.

Another difference is that the photographer can’t see the picture that they just took at the moment it was taken when it was in taken on film. On a majority of digital cameras, a preview of the photo pops up in the back of the camera for the photographer to look at. This gives the photographer instant feedback on what they shoot so they can tweak it until they get the perfect photo.

With film photography, the actual roll of film has to be processed and analyzed to see if there is a good photo that captured what you wanted to capture. If not, the photographer would have to go back and reshoot what he already shot. This is, however, not always possible because there are some shots that are spur of the moment, and they can't be duplicated, so that moment in time is lost.

Another big difference between film and digital photography is how many photos can be taken at once shoot. For film photography, a roll of film can hold anywhere from twenty frames up to thirty-six frames. A normal thirty tow gigabyte SD card can hold up to two thousand jpeg photos, or about fifteen hundred raw images. To get the same amount of images on film, a photographer would have to carry four hundred and sixteen rolls of thirty-six frame rolls, and at that point, it is not very practical. So a photographer is limited in the number of pictures they can take per shot. With less number of pictures taken, they have to be on top of their game for every shot to make sure they got what they desired for each photo.

Each roll of the film also cost. With SD card, there is the one time fee of the card, but afterward, it can be used time and time again. The film can only be used once, and then a new roll of film is needed. For class, each roll of twenty frames cost two dollars, and each roll of thirty-six frames cost three dollars. The total cost of having four hundred and sixteen rolls of thirty-six frame rolls would cost. One thousand two hundred and fifty dollars, which is significantly more expensive than the price of an SD card.

**Process of Capturing and Printing a Photo (with manipulation)**

 Once the process is known for each way of photography, then the focus can shift to how each can be manipulated. The basic process of capturing the photo is the same as before, but it after the particular moment has been captured that the manipulation of it can begin.

 **Types of Photo Manipulation**

There are multiple ways to manipulate a photo, with some being more advanced than others. For the course of the paper, the five manipulation techniques focused on are cropping, contrast and brightness, dodging and burning, color, and combining elements from different photos.

 The first three on the list are rather easy manipulations to make. Cropping is just cutting out part of the original photo that is no longer desired. Contrast and brightness focus on the overall image, and if the desired finish product is to be harsh and gritty or soft and luminance. It affects the overall brightness of the photo. It also focuses on how dark the dark parts are and how light the light parts are.

 Dodging and burning are a little more difficult. To dodge and burn is to take an object out of the photo. It could also mean making a part of the photo darker compared to the rest of the photo or vice-a-versa. To dodge a part of the photo is to brighten the area, and to burn a part of the photo is to make that area of the photo darker. With dodging and burning, if one part of the photo is getting dodged, the other part is automatically getting burned, for they work in tandem with each other.

 The next one is color. For color, there is a lot that can be manipulated. One can change the color of a certain aspect of the photo, or they can change the overall color of the photo. With a wide variety of colors and shades and tints, there are endless possibilities of what color can be in the photo. Color lets one’s imagination go wild once the original photo is taken.

 The last manipulation technique is combining different photographic elements. This technique is combining two photos, or at least parts of two photos, to create a whole new image. The new image is not one that was originally shot but was done after the fact. This could be for multiple reasons based off what the photographer desires for the final product.

 **Photo Manipulation History**

Photo manipulation has been around for a while. Manipulating of photos has been used as early as the 1840’s when cameras used film and they were processed in a dark room, and the art of manipulating photos has only grown from there. It started in the dark room when the photos were being transformed from the negatives. Photo manipulation was used for anything from “art, politics, news, entertainment, and commerce” (Menschel) just as it is used in modern times. Newspapers, advertisers and magazines used photo manipulation to create images that weren’t real, often times to help sell a product or an idea. Instead of changing the person in the image to make them look more beautiful, they would normally edit the background to add “dream like scenarios and surreal imaginary worlds” (Menschel) to the photo. This kind of manipulation, while not causing the viewed doubts about who they were, it did cause the viewer to feel insecure of their position, either financially or socially, which help to the increase sells of products.

Erwin Blumenfield was an artist in the 1940’s to the 1960’s and he edited the model of the photo and not background. One of his most famous works is called “Doe Eye” (Menschel) for the cover of Vogue in 1950. This aesthetically pleasing photo helped the selling of that specific issue of Vogue, because it intrigued the reader to at least picked up the magazine. For the cover, Blumenfield removed the models face, and just left an eye and the mouth. After this first step in editing the model, many other editors started to edit their model, for they had to stay current if they wanted any chance of selling anything. This created a shift from editing the background of a photo to edit the model especially to enhance their beauty.

**Film Manipulation**

The amount of photo manipulation that can be done in film photography but it is there. For cropping, it is as easy as enlarging the photo so that only what is desired fits on the page. That or after it is printed, the photographer can cut off what is not wanted and throw it away. Brightness and contrast are also easy to accomplish. Brightness is based on the length of the light shown through the negative. The longer the exposure the darker the photo. For contrast, there are specific filters that can be placed in front of the lens of the enlarger to increase the contrast of the photo.

For dodging and burning, more planning is needed before the print is made. To remove something from a photo, there needs to be something, whether it is a hand or a piece of cardboard, to block the light from reaching the paper. Special care has to be taken though because there can be a sharp divide from where the paper was exposed and where it wasn’t, which can be distracting for the viewer. All it takes is some practice. (London, 108-110)

For color, that is done after the print is made. There is no rule saying that once a print is made, nothing else can touch it. The photographer can color on it and write on it all they want and in whatever color. It makes it unique because there are multiple elements combined in the one photo.

Lastly, there is the combining of photographic elements. There are two ways to accomplish this. The first is to take a roll of film and expose it all with pictures. Then a photographer would stick the roll back into the camera, and take the second round of pictures on it. There would have to be some preplanning because the exposer needs to be cut in half for each round of exposures because the film is being exposed to twice the amount of light. There is also the problem that the frames won't line up exactly, so the frames will end up overlapping creating a weird effect.

The second way to combine photographic elements is by combining two negatives in the enlarger. When placing the negatives in the negative carrier, two would be stacked upon each other. When doing this the time that light is shown through the negative has to be doubled because it has to go through two negatives which require more light.

 **Digital Manipulation**

When it comes to digitally manipulating photos, there is more that can be manipulated and the easier it is. When it comes to cropping, all that is needed is the crop tool found in most editing software. For brightness and contrast, there is a setting that can be changed by moving a slider and can be fine-tuned to be just as the photographer wants it to be. These are normally done as soon as the photo is opened in the editing software.

 For dodging and burning, there are tools that are built into most software programs that allow for easy access to getting the desired effect. There is more control over where the dodge is happening, and the edge can be a feather to make it look seamless. There are also tools that are made to remove any blemishes in the photo to make it look perfect.

 The color is the biggest thing that can be changed in digitally. Each hue can be changed in saturation and brightness. A specific color can be selected and changed throughout the entire photo. The overall tone of the photo can be changed to make it warmer or cooler, or any color that is in the rainbow. If the photographer knows the tools of the editing software, there is so much that can happen in a single photo.

Lastly, when it comes to combining photographic elements, it is easier to combine the images digitally. The selected part can be cut from one photo, dragged to the other and resized and recolored, and manipulated in any way before it is added to a final photo. There is more control, and there is a smoother combination of images than with film. And if anything seems out of place or unnecessary, it can be deleted before the final photo is printed.

**Effects of Photo Manipulation in Modern Times**

**Invention of Photoshop**

Photoshop did not come around to be the top photo manipulation software until the 21st century, with the explosion of digital photography, but it was started in the late 1900’s. Photoshop was first invented to just display a grayscale image on a screen. Thomas Knoll, in 1987, began to code a program that could fix the problem, and display the grayscale image. His partner was his brother John Knoll who was the head of the special effects department for the first “Star Wars” movie. It was John Knoll, who suggested that the program be turned into a “full image editing program,” (Kmahesh) instead of a program to just display photos. The first name that the software had was Image-Pro, and the editing of digital photos began.

When Image-Pro started to grow big commercially, the brothers changed the name to Photoshop, allowing the user to instantly know what the program was about. In 1988, the Knoll brothers and Adobe entered into an agreement so that Adobe had all wholesale rights, and the deal made Photoshop known nationally and internationally. The first Photoshop, released in 1990, was used for color correction and for hue and saturation. The software could also create layers to a photo to help the editor pinpoint, and work on a certain part of the photo without affecting the rest of the photo. When Photoshop started to make editing the model of the photo easier with Photoshop 6.0 which had the liquefy tool to change the shape of a model. Photoshop 7.0 made it possible to remove blemishes from the model, which made the editor’s job easier to give the model flawless skin. As the Photoshop software advanced, the easier it became to edit the model, and the more popular, because it soon didn’t take years of experience in a dark room, but a few quick tutorials to make the model look as “attractive as possible.”(Kmahesh) The more beautiful the model looked, then the more pleasing that it will be to the reader, and it will grab their attention.

**Effects in America**

Photoshop is heavily used in the media. In America, there is a lot of people, especially woman, who struggle with an eating disorder. Eating disorders range from anorexia, where the person starves themselves to death; to bulimia, where the person eats and feels guilty afterward so they force themselves to throw it up. All of this is an attempt to help the young woman with the disorder to lose weight so they can become unnaturally thin, which can lead to liver and kidney failure, and if the problem goes on for a while, then it leads to death.

According to Anorexia Nervosa and Associated Disorders (ANAD), “47% of girls in 5th-12th grade reported wanting to lose weight because of magazine pictures.” (ANAD) When girls are this young, their minds are still growing and changing, we imprint what the ideal woman should look like, then these images stick with girls into adulthood. Many of the people who have an eating disorder are the young woman. ANAD says that 95% of the people who have a disorder are between the "ages of 12 to 25.8”. (ANAD) Girls grow up with these insecurities, and unhappiness because they can't reach their goal just by diet. Taking things to extreme measures, girls this young create a new mental pathway in their brain, which tells them that what they are doing is okay. Once these connections are made, they are very hard to break. Eating disorders then become a mental disorder and they do not go away as you get older. Without seeking help, the mental disorder can really take over and control the person who is already mentally ill. Eating disorders end up having the “highest mortality rate” than any other mental illness, because it is self-inflicted, and many young women who have this disorder hide it, and many outsiders blow past the problem like it is no big deal. (ANAD)

These magazines contribute some to this high mortality rate. About half the girls in the school report, they want to lose weight. Girls have a lot of ways to find support online to lose weight and they truly believe that they will feel pretty if they lose some weight, so that they will look like the models in the magazines. Girls that young, don’t know about the risks that are involved, and they don’t know the mortality rate of losing so much weight. All they know is that the models in the magazines look thin, so they must look thin too.

**Christian Perspective of Photo Manipulation**

The problem with photo manipulation is the fact that it can lead the viewer astray and make them believe in things that are false. One big thing with photo manipulation is the struggle with body image. When people are constantly being pressured to look a certain way, it is easy to lose sight on who God made us be. They feel like they are less because they don't measure up to human standards, even though those are not the standards to live up to.

 Christian stand on the principle that God created all of us to be who we are. Psalms 139:13 is often quoted when it comes to the idea of body image. It talks about how God made his people in their mother's womb, and how they are perfectly made. If Christians were made perfectly, then it shouldn't matter what other people look like, for God made them a certain way and Christians are not to try and achieve their look.

 Another part with manipulation over all is the fact that manipulation is changing the truth of the moment. For example, if someone is wearing a white-colored T-shirt and it is changed later to blue, that is not true to what happened. Some of the manipulations are obvious, especially when they are done poorly. However, with good manipulation skills that photo becomes believable for truth. A Christian should constantly be asking what is real and true and what is manipulated and trying to convince them of something they are not. Christians are not to sit by passively and just accept what they see, but they should be comparing what they know to the Bible, and questioning what is actually real.

**Conclusion**

 When it comes to the difference between film and digital photography, there is not one way that is better than the other. Each has their own benefits and drawbacks. The reason why digitally is so popular is that it is more practical and easier to access for the general public. However, both film and digital photography can be manipulated, and it is important to be aware of the manipulations that take place in each photo. As Christians, it is important to discern what the truth in each photo and what the lies are before acting on what we see in the photo, for it is easy to be led astray from God and who he says we are as his children.

Works Cited

Kmahesh. "History of Photoshop: Journey from Photoshop 1.0 to Photoshop CS5." *Creativeoverflow*. N.p., 12 Sept. 2011. Web. 27 June 2014.

London, Barbara. *Short Course in Photography: Film and Darkroom*. 9th ed. N.p.: Prentice Hall, 2014. Print.

Menschel, Joyce F. "First Major Exhibition Devoted to History of Manipulated Photography Before Digital Age Opens at Metropolitan Museum October 11 October 11, 2012-January 27, 2013."*Home*. Metropolitan Museum of Art, 12 Aug. 2012. Web. 27 June 2014.