

Film is thought to be made merely by technological advances, from the creation of celluloid to digital 3D animation. The first motion picture camera, as you know, was created by Marey, but it was very different than the ones we have today. It was a single lens camera, the used photographic plates to record motion. Then there was *Cinematographe*, the first camera/projector (Dixon and Foster 4-7). It wasn't until many, many, years later in 1954 that the first videotape was produced. It used "enormous machines that ran two-inch tapes in a straight run without editing" (Dixon and Foster 238). Then, about fifty years later, people started shooting movies digitally. The first film ever recorded that way was put immediately onto a hard drive implanted in the camera, inserted into a computer (Dixon and Foster 323). Along with the new forms of editing, green screen was created so that filmmakers no longer had to shoot in a direct location, rather just by standing in front of a screen, and details/backgrounds were incorporated afterward (Dixon and Foster 382). Soon after that, DVDs were produced so that people could watch movies in their own homes rather than having to go to theaters--but, that easily went out of style when things like Netflix, Hulu, and Amazon were invented, making it even more effortless to watch movies (Dixon and Foster 381).

A huge part of film is editing, and it's the masters in editing that have changed how people make films more believable. D. W. Griffith is one of these masters, who used a sense of speed and pacing in films, fade-outs to express the passage of time, and close-ups and cross-cutting for suspense. Cross-cutting is a way of switching back and forth between scenes happening at the same time. This is still used today in almost every film we see, it's what makes films more practical (Dixon and Foster 22-23). Sergei Eisenstein changed filmmaking too, with a revolutionary theory of montage. There are four parts to this theory, rhythmic montage, tonal

montage, collisionary montage, and collusionary montage. Rhythmic montage is having a long or shorter shot length to add suspense or excitement. Tonal montage shows emotional feeling with intercutting, while collisionary montage are images put together in order to create a violent effect, and collusionary montage shows actions happening at the same time by editing them together (Dixon and Foster 73). A filmmaker known for animation that you have probably heard of, Walt Disney, also changed how film is made, except, in this instance, with animation. He used something called multiplane camera, where animated drawings would be inked using layers of plastic cells to create depth and perspective (Dixon and Foster 127). We no longer use this method because of our access to computers, but it was a pretty big deal because it took a lot of time and patience to put together.

One of the biggest technological steps in filmmaking was also the creation of sound. Although it did cause quite of bit of disastrous change, it brought filmmaking up to a whole new level. One of the many problems with sound film when it first started was standardization. Some of the processes used to integrate sound with film included the tri-ergon system, and the chronophone where sound was recorded onto wax cylinders synchronized with the visuals (Dixon and Foster 15 and 89). The main ones were the Phonofilm and the Vitaphone. The Phonofilm was a sound-on-film system created by Lee de Forest, while the Vitaphone was a sound-on-disc system. Several films were made in the forties that used both of these methods, and in Hollywood they finally decided on the Phonofilm, making it the most popular choice for sound films all over the world (Dixon and Foster 89 and 50-52). Obviously that soon changed with the coming of digital video cameras, but back then, it was the standard.

Besides the coming of sound, there was also the coming of color. It was not as big a deal, because color had been used in films as early as the nineteen-hundreds, but it didn't become the norm until around the same time when as the coming of sound. The main form of early film coloring was Technicolor, which consisted of two types; two-strip, and three-strip. Three-strip was used much more often because it was considered a better option. It was "an additive process that exposed three separate strands of film in one gigantic camera, and then printed these three strands on top of one another to produce a full color effect" (Dixon and Foster 96) Before this, filmmakers were either coloring by hand, or stenciling and dyeing the film by running it through a fixing bath and only dyeing it one color (Dixon and Foster 96). But, coloring got even easier with Eastman's monopack system where one would simply use a single strand of film to record a full spectrum of color (Dixon and Foster 172). Filmmaking was getting easier and easier as the years went on, but there is still one form of it that we all know about but just hasn't been covered yet. Where was animation in all of this?