2030: UTILIZING ANIMATION
in
POLITICAL MESSAGES

by

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ABSTRACT

The purpose of this paper and film is to explore the animated medium's ability to convey controversial political topics. The goal of this film is to reach my audience on an emotional level, which will hopefully motivate them to act on the information presented. By using animated themes and metaphors, the audience can digest the political messaging by disassociating themselves from the characters in the story. This will allow them to be open to other perspectives.

This paper will explore how one can use the aesthetic quality of animation imagery to convey an important political message about our environment. The hybrid combination of two-dimensional (2D) and three-dimensional (3D) animation mediums creates a unique visual style utilizing texture and movement to reinforce the story. By using the style to supplement a story, the message could be emphasized and reiterated throughout the film, again optimizing the ability of a short to deliver the intended message.

This work is dedicated to the First Nation Peoples, Veterans, and American Citizens that have tirelessly fought for our right to safe drinking water.

And to my Abuelitas Anita and Joyce

ACKNOWLEDGMENTS

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CHAPTER ONE: INTRODUCTION

Throughout modern times, various forms of propaganda or Public Service Announcements (PSA) have been used by governments to disseminate important information to their citizens. These uses have varied from spreading positive or instructional messaging, to biased or unfounded information. In all of these cases, we have seen successes in various governments. From the riveting animation of the sinking of the Lusitania to the various animated shorts commissioned by the United States government in the 1940s to drum up support for World War II, and even today with Vietnam's TikTok[i] famous informational video and song about proper hygiene to help stop the spread of COVID-19 (Hung).

In today's age of "going viral"[ii] on social media, a person or entity needs just one successful video to get their message out to thousands, if not millions. Many of the videos I have seen focus on individual behaviors like not using straws or using a reusable bottle. However, I have personally noticed that amongst the many issues discussed, the larger issue of how the use of fossil fuels factors into climate change isn't often presented in the same "bite-sized" pieces of animation. There have been many documentaries, TED talks, and other lengthy discussions about this issue, yet no short videos that can be easily shared between friends and family. In the '40s, the United States commissioned several short animations to be shown to the public, creating an environment where they were continually educated about the war, the importance of our involvement, and how citizens at home could help. These videos allowed people of all ages, and all literacy levels, to be informed. According to a Pew Research poll from 2015, less than half of all Americans feel that "climate change is harming people now" (Stokes 2), or that "climate change is a very serious problem" (Stokes 2). Only 44% of Americans say that "Dealing with global climate change should be a top priority for the president and Congress" (Funk). This

is despite a vast majority of scientists from all around the world and from diverse backgrounds agreeing that our use of fossil fuels has impacted climate change and that our window to make significant changes to avoid the worst of the effects is diminishing (United Nations).

Therefore, I believe by creating short, less than two minutes, videos visualizing different aspects of climate change or our dependence on oil, people would be more inclined to view them, share them, and act on this information. Even though we saw an increased turnout in the 2016 and 2018 elections, so far there has been a marked decrease in the turnout during the 2020 Primaries (King). Because the 2020 General Election is four months away, I feel that my film has the power to encourage new and younger voters to vote for candidates who support legislative action to combat it. Millennials and Gen Z, who are first time voters, are far more likely to view climate change as an important issue (Parker). By placing the call to vote after my short video, I will encourage the audience to act on what they just learned.

I have always been interested in Environmental Sciences and am also quite concerned with the state of our climate. I have anecdotally found that many of my friends and family are quite uninformed on the matter. It isn't a common talking point in the evening news nor is it seen as an immediate issue to many people compared to other priorities in their life. One topic, in particular, I found underreported was the protests surrounding the Dakota Access Pipeline (DAPL). While a 2017 documentary, *Awake, a Dream From Standing Rock* (Myron Dewey)*,* has since been made about the protests, knowledge of the DAPL's impact on the surrounding communities is still not widespread, as well as knowledge about the lack of pipeline safety in general.

What I found most unacceptable of this event, was the use of force against the protesters. Our right to assemble is protected by the First Amendment, and yet First Nation Peoples,

American Citizens, and even Veterans were confronted with many different forms of physical force. This included attack dogs, rubber bullets, teargas, ice-cold water in the middle of winter which caused hypothermia in several individuals, and concussion grenades (Barajas). This culminated in one protester nearly losing her arm after a concussion grenade was thrown at her and others (Wong). Regardless of beliefs or opinions, everyone has a right to safely assemble. The actions at Standing Rock are in direct opposition to this.

Voting, in my opinion, is the first step to having an active voice in our government and community. If people are not made aware of climate change facts, they cannot factor them into important decisions such as electing proactive representatives or supporting climate-friendly industries or companies. The goal of this film is to educate those who are not aware of this continuing issue and ask them to act upon this new information.

CHAPTER TWO: GOALS OF PROPAGANDA VS PSA'S

To better understand the goals of my film, it is important to understand the difference between a Propaganda piece and a PSA piece. The main differentiating factor is the amount of bias applied to the interpretation of facts or events represented. A piece that solely presents factual information so that the audience can decide how they want to act upon it, would firmly be in the scope of a PSA. A piece that includes little to no factual information, and instead shows a specific viewpoint or opinion, would firmly be in the scope of Propaganda.

Since the mid twentieth century, the term "propaganda" in the United States (US) has been associated with misleading or false information from regimes viewed as unfavorable by our government, such as Germany during World War II (O'Barr). This is not to say that propaganda is inherently bad, as an organization may utilize it alongside other media that is less opinion based and provides their sources. The purpose of the propaganda piece is to get people interested. However, people need to be able to differentiate between the two, or elements of the two approaches found in other media, to better understand what is fact and opinion. It is also important to note that much of the advertisements and media that the US commissioned or promoted during World War II would also be considered propaganda or having elements thereof (O'Barr). This shows that even if a piece of media is advertising a viewpoint that appears to be lawful or good, such as anti-Nazi or pro-America media, it is still showing a specific viewpoint and therefore is propaganda.

Unfortunately, it can be quite easy to use propaganda to spread misinformation or views that are considered morally reprehensible. An example of this would be the Anti-Black advertising during the late 18th and early 19th centuries. Many racial stereotypes that we see today originated during this time. Most commonly the idea that black people were "dirtier" than

white people. This view was shown again and again through advertisements for soap during this time which would feature someone "washing off" someone's blackness and "turning" them white. The first goal of this messaging was to show the effectiveness of the soap. However, this messaging was only successful due to the pervasive prejudice against Black People. This example shows how even works originally meant to promote one idea, selling soap, can contribute to the spread of other messages, prejudice against Black People.
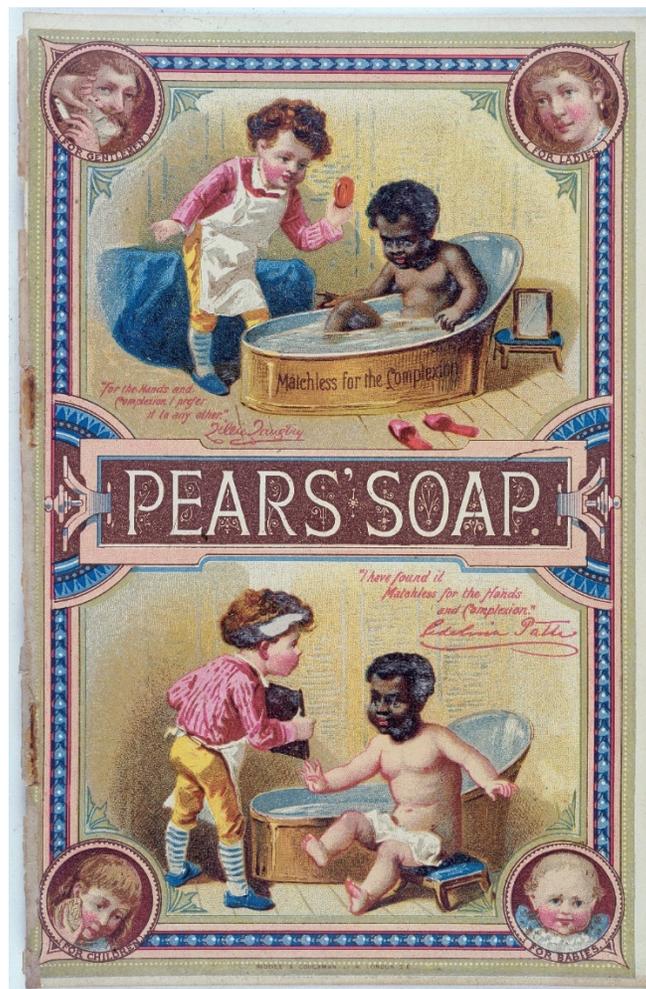
Figure 1: Advertisement for Pears' Soap showing a black baby being "cleaned".

Source: <u>Wellcome Collection</u>. <u>Attribution 4.0 International (CC BY 4.0)</u>

More commonly, PSA's will involve topics such as health and safety or disaster preparedness. For example, the US site Ready.gov, has information describing how one can prepare for, and deal with a variety of disasters or emergencies ranging from power outages to hurricanes, and even nuclear explosions. The hurricane information is especially helpful to me as a resident of Florida. Instead of giving in to the panic before a storm, I am calm knowing that I am ready. Another example is the recent campaign by the Center for Disease Control (CDC) to spread information about COVID19 that includes tips on proper hygiene, how to avoid infection, and what the symptoms are so you know to get tested.

One of the most famous PSA campaigns is Smokey the Bear (O'Barr). Its goal was to educate the populace on how to safely create and put out campfires, and to dispose of matches or cigarettes to prevent forest fires. Alongside the more informational ads, TV and print ads that showed idyllic landscapes and animals along with Smokey's famous line "Only you can stop Forest Fires" were widely distributed. While these specific ads may skew more towards propaganda as their actual information content is low, their goal was to get citizens concerned about the issue and then to *seek out* the information on how they could rectify it.

Keeping in mind that propaganda is not inherently bad or misleading, examples of propaganda include the Rosie the Riveter campaign during World War II. This campaign, led by the ever-famous poster, spread the idea or *image* of women working in factories to help the war effort. This campaign doesn't include any factual information, just a *message* to try and persuade women to join the workforce, which badly needed an influx of able-bodied people as most of the men were off at war.

This shows that it is important for audiences to understand when something is propaganda so that they can form their own opinion on the topic. In my experience, well-meaning propaganda, such as the advertisements featuring Smokey the Bear, is often accompanied by sources for their information or directions to where someone could learn more. This is the best use of this kind of messaging as it maintains the emotional and persuasive aspects of propaganda, but, is also backed by the factual information found in PSA's to give audiences a clear directive on what to do about this messaging. In the case of my film *2030,* I chose to use this approach. The goal is to at first pull the audience in with an emotional response, but then present them with factual information and resources upon which to act.

PSA:
- Factual
- Emphasis on information
- Topics usually include health and safety
- May be easily ignored

Emotional yet persuasive

Propaganda:
- Biased
- Seldom includes information
- Topics vary widely
- May be part of a larger campaign
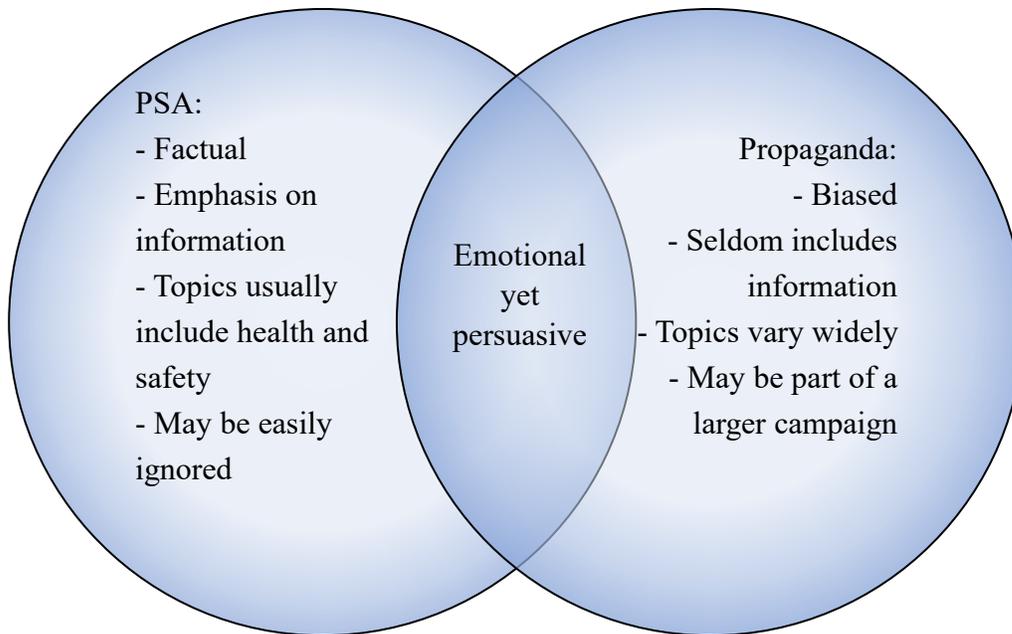
Figure 2: Venn Diagram Showing the Pros and Cons of Propaganda and PSA's

Source: Angela Hernandez

CHAPTER THREE: USE OF ANIMATION VS LIVE ACTION

IN PROPAGANDA AND PSA'S

As noted in the introduction, since the advent of film and time-based media, animation has been used in numerous examples of propaganda. One example is during the two World Wars. While at the time filming events live were limited because many cameras were not easily portable and film strips were highly flammable and easily damaged, animation provided an alternative where scenes or scenarios could be re-created and filmed all in one locale. The first-ever example of this would be in the short film *The Sinking of the Lusitania* directed by Winsor McCay in 1918. The sinking of this passenger ship by the Central Powers was an important turning point in World War I. This act broke several established maritime laws concerning submarine warfare during the attack. At the time, the US was officially neutral on the war, with many citizens opposing involvement in the war. McCay, however, was outraged when he learned of the attack and dedicated almost two years to create the film (Crow). This recreation of the attack helped to change public opinion of the war, and as such the public then called for continued involvement in it.
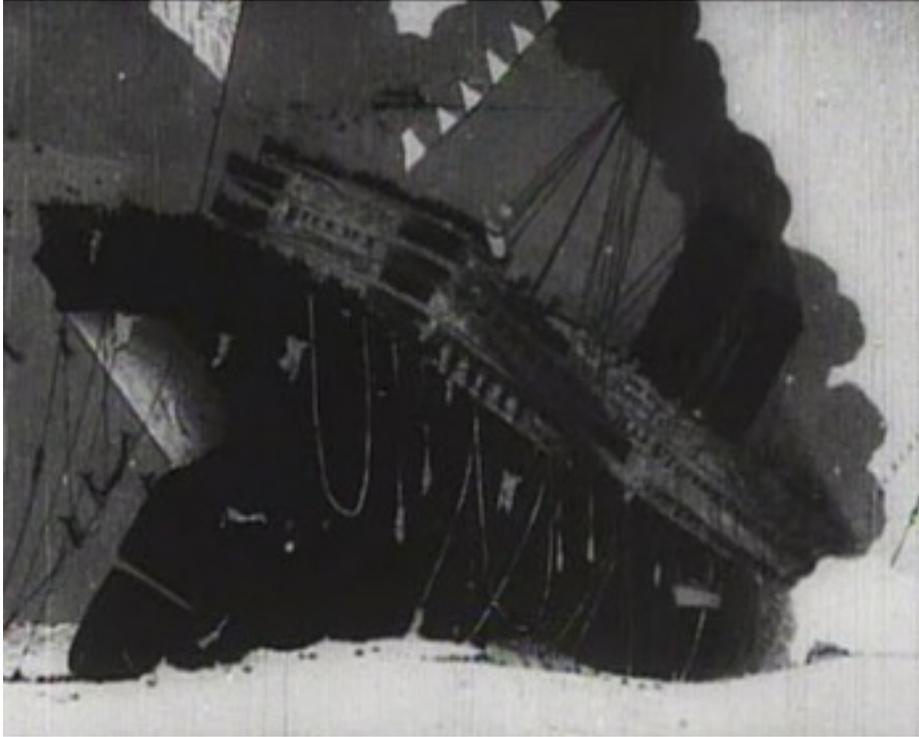
Figure 3: Still from *The Sinking of the Lusitania*

Source: (McCay), Retrieved from the Library of Congress

While there was no live recording of the attack, an important milestone was set here: animating otherwise grotesque, morbid, or violent actions allowed audiences to focus on the story or message, instead of being repulsed by the imagery. Audiences weren't watching the *actual* passengers of the Lusitania throwing themselves overboard as the ship sank. They were watching shadowy human-like figures with no visual connection to specific passengers.

The United States government increased the production of animation propaganda in World War II. Animations during this time ranged from propaganda used to garner support for the war to instructional videos that citizens could follow to do their part at home. One such example of the latter is Disney's *"Out of the Frying Pan, Into the Firing Line"* created in 1942. Here, Minnie Mouse has just finished making breakfast and is about to give Pluto the bacon

grease. The narrator stops her and explains that the government is collecting waste fats as they can be used to create ammunition. There are several shots in which the animation of the fat transforms into an animation of said ammunition. This visual reinforcement of what is being explained to the audience helps them understand what is being asked of them, and as a result, they are given a purpose in a time where they may feel lost or confused. Participation at the beginning of the program was low, as housewives were reluctant to give up their fats as rationing became the norm (Braun). However, the propaganda worked to increase participation, says Susan Strasser, author of *Waste and Want: A Social History of Trash* (Braun). This success could be attributed to the fact that the PSA explains both audibly and visually how one would save the fats, where they would drop them off, and that they would be paid for the fats. When given clear directions, it is less likely that a person will become confused or lost in the guesswork.

Animation Vs Live Action in PSAs

As discussed, animating a situation can allow audiences to watch a scenario that normally wouldn't be palatable. It also allows artists and organizations to recreate scenes or scenarios that may not be possible, or potentially dangerous to do so. As such, animation expands the possibilities in what kinds of stories can be told to deliver the message needed. To better explain, let us compare the two short PSA films, *"Back-to-School Essentials"* and *"Monster in the Closet"*.

The former, created by Sandy Hook Promise, is a live-action PSA where various students talk to the camera, or audience, about what kinds of supplies their parents got them for the school year. However, the tone of the film increasingly darkens as the audience realizes that there is something wrong as students start to run and scream. The children talking to us are then shown using their new back to school gear to aid them during the crisis. Some of these situations, such as using a sock as a tourniquet on a bleeding leg, were quite graphic.

Figure 4: A student uses a sock as a tourniquet in *Back-to-School Essentials*

Source: Sandy Hook Promise, BBDO New York

Figure 5: A student arms themselves with a pair of scissors in *Back-to-School Essentials*

Source: Sandy Hook Promise, BBDO New York

When this PSA was initially released, the immediate response was positive (Bellware). However, some people felt that the imagery was too graphic. Seeing real children in supposed danger could have been aversive to some viewers. Even the co-founder of Sandy Hook Promise admitted that it was "hard to watch" (Bellware), and others called it "chilling" and "harrowing" (Criss). In this case, this was intentional. The aim, it seems, was to shock the audience so that they would then be open to discussing gun violence. However, there is no direct call to action, only a suggestion that "School shootings are preventable when you know the signs" (Rubin). It's also important to note that the PSA heavily focused on the students in question and did not show any images of guns or a shooter. Doing so might have garnered more of a negative reaction to the ad.

In comparison, the *"Monster in the Closet"* by Hornet Inc. ad for States United to prevent gun violence, waits until the very end before delivering the shocking ending. In this animated PSA, we are brought into the lives of an average family, whose young boy is afraid of something in the hallway closet. Both parents assure him that nothing is wrong, and there is no monster. Eventually, the young boy inspects the closet more closely, and finds an unlocked, and loaded gun in a box. As he inspects the strange object, he accidentally shoots himself in the head and falls, his blood pooling around him. His father outside is completely unaware of what just happened.

Even though creative editing and framing were used so that the impact of the gunshot wasn't seen the result is still quite sudden and startling. Once again, no direct call to action is made at the end of the ad, the viewer is just informed that "1.5 million U.S. children are living with unlocked, loaded guns." (Geleyn). However, there is a clear *implied suggestion* that if the

viewer does not keep their guns or firearms in a safe, then they should do so. Therefore, while this PSA also creates a strong emotional reaction, the audience is expected to act upon it.

Where the *Back to School* PSA was meant to keep a dialogue going, this PSA is meant to show the immediate effects of an individual *not* doing something. The animation style helps in this regard in that the family depicted could be any family. The use of animation also allowed this crucial scene to be in the ad with fewer safety issues than if it was filmed live. When the audience watches the *Back to School* ad, they are not expected to see or imagine their children in that ad, or in that situation. The point was that this was something currently happening, maybe not to their child, but someone else's, and something needs to be done about that. In contrast, the loose style of the animation in the *Monster in the Closet* ad gives enough leeway that the audience could think "that could be my kid/family". Another difference between the two films is that while the former discusses an issue that is complex and requires government intervention, the latter discusses an issue that is individualistic, and simple to remedy.

<u>Use of Animation to Put a Scary Situation into Context</u>

Very recently the globe has been gripped by the ongoing COVID-19 pandemic. Governments around the world are scrambling to educate their citizens on the best ways to limit the spread of the disease. However, there is also the issue of panic. Store shelves are being picked clean and people fight over essentials like toilet paper, masks, and hand sanitizer. This level of panic could be counterproductive to the world's efforts to slow the spread of the virus. Here, animation has already served a purpose in helping some people to find calm, and even joy, during this uncertain time. Viet Nam's National Institute for Occupational and Environmental Health (NIOEH) released an animated short music video explaining what the virus is and

showing the audience different steps they can take to stop the spread. Animated characters wash their hands and avoid crowded spaces, among other things, and the result is showing the virus being flicked away.

The goal of this short is educational. With an enemy that cannot be seen, once again people may feel lost or confused about what they are supposed to do. However, now the audience is armed with the tools necessary to navigate their day to day lives with less stress and fear of the virus. The use of animation in this message makes it charming, and the cartoony visualization of the virus takes an unknown enemy and makes it seem silly and easily defeatable. It was also somewhat necessary to use animation for this message, as the virus cannot be seen with the naked eye and so it's impossible to film it in such a way that the footage would be usable in this setting. The style choices satisfied both a practical need and an emotional one.

However, many people found joy in this film and its accompanying song. On the popular social media platform TikTok, a dance was created by users to go with the song. These "dance challenges" are then attempted or have additional content added to them by other users. So, during a time where many people have to stay indoors or away from public spaces, they are still able to connect with others and participate in kind of group activity. I believe that this reaction to the original PSA should not be overlooked or underestimated. The original goal was simply to educate and calm some of the fear surrounding the situation. However, not only was this original goal achieved, the response went above and beyond in that it became an international message and brought joy into people's lives.

CHAPTER FOUR: USE OF STYLE AS A STORY ELEMENT

Using Contrast of Texture

As an artist, I have always been drawn to the use of texture in art. Seemingly simple paintings can take on a new life with the introduction of texture. Such as the work of Harak Rubio. Color and shape take a backseat to the texture that the artist has painstakingly added to each of his pieces. The light and shadows created by the raised texture introduce another level of shape and line into the paintings. In some pieces, a solitary rectangular shape commands the center of the composition. While the shape uses color to contrast with the background, it is also done in a completely different texture to reinforce the isolation of it.

In digital mediums, we must infer the existence of texture so that the audience may imagine what it would feel like. By imbuing the natural elements in the film with a rough, organic texture, I am utilizing more of the audience's senses to articulate the message; we are part of our natural world and must work to protect it.

Because the goal of my film is to illustrate a struggle between man and nature, I wanted to emphasize the difference between the oil and the rest of the elements of the film. While petroleum is a naturally occurring element in nature, the process of moving vast quantities of it to the surface and burning it is not. The issue does not lie in its existence, but when that existence is disturbed. As such, the "oil" representing elements in the film are all done using 3D animation so it would contrast against the rough paper texture of the 2D elements. This would further emphasize that something is amiss and does not belong here.

<u>Camera Styles</u>

I also explored how the specific cinematographic style could also support the other themes found in the video. Using the camera as a character gives an additional level of depth to the film emotionally. The goal was to use the camera to preserve as much of the emotion as possible. In the case of the film *2030*, the goal was more so heavily leaning towards emotion rather than the story as it would be the *emotion* that would cause my audience to act, as established in the prior discussion.

Continuous Camera Movement

To emphasize the growing problem of climate change, transitions are done in such a way that the camera rarely stops. Scenes lead into one another to emphasize how all of our actions are interconnected and have an effect on the world around us. The audience is not given a resting point once the pollution has entered the story where they can reflect on what they've seen until the very end. Also, by having the movement be continuous, it makes the pace of the film seem faster, and so it is less likely that the viewer will get bored and not finish the film. The movement also emphasizes the call to action at the end of the film; suggesting that since this is an issue that won't wait for us, we must act immediately. These goals are achieved by animating transitions, such as the water rippling after the bald eagle sinks, and as it clears, we see the child on the edge of the river.

Use of Camera as Narrator and Spectator

The point of view of the camera is also very important during the film. This film describes events that have already happened. In this instance, the audience has a third-person point of view that distances themselves from the events unfolding. This point of view also puts

the audience in a position where they may feel helpless, or unable to do anything to change what is already done; this is intentional. As the audience continues to be reminded of past events, they may think "Okay, but what does this mean for me now?".

It is at this point that they receive an answer as the perspective of the camera changes during the final scene. Where the audience was just spectators without any agency or control, they are now firmly put into the perspective of the child, the future. History has now caught up to the present, and the audience is reminded that the future depends on the choices they make today. Shortly after, the call to action, or the reminder to participate in voting is expressed to them. By placing the audience into a position where they are likely wanting an answer, and then giving it to them, the message may be more positively received.

While in recent years we have seen an increase in the number of Americans concerned about climate change, many still feel as if there is nothing we can do to help stop it with nearly half of U.S. adults saying that "policies aimed at reducing the effects of global climate change generally do more harm than good" or "make no difference" (Funk). This pivotal moment in the film addresses the unease and confusion that many people experience when facing an issue with no clear resolution. Much like with the propaganda cartoons of the 1940s, presenting people with a short story about a recent issue, and then instructions on how they can help will bring action on the viewer's part. Once again, as the camera flips, the audience is now put into the decision-making position. Would they want their kids to drink the contaminated water shown?

CHAPTER FIVE: SUCCESS OF TECHNICAL ASPECTS

Several technical problems were overcome during the production of the film to create the look desired. Much time was invested in finding the best tools and programs to complete various tasks required of the film. These programs included Autodesk Maya, Toon Boom Harmony, and Adobe After Effects. While most of the film is animated in Toon Boom, many of the effects were created wholly in other programs, or with the aid of other programs, before being composited into the main film.

Iridescent Shader

Using an iridescent shader in Renderman, along with the scaly texture of snakeskin, I made a unique look that allows the audience to recognize the snake as such, but then imply at its representation of big oil. I wanted the shader to seem realistic, but still make the snake distinctly 3D, so it would contrast against the paper texture. This symbolizes the struggle between the natural and the artificial. How our modern and convenient life comes at a steep cost which is the pollution of our planet that in turn makes it even harder for us to live here comfortably. Plastics and fossil fuels have become a staple of the modern world, yet if we are to survive, we must find renewable alternatives. The snake rig I used was purchased on Turbo Squid. Some editing was required to ensure that it fits the needs of the film. However, I was easily able to apply the shader I selected to the geometry of the snake

Multiplane Camera

The 2D elements of my film relied heavily on the multiplane camera. Instead of having one flat background or set image, a multiplane image breaks up the background image into various pieces so that they can be animated at different speeds and give a sense of depth. Layers closest to the camera should appear to move more quickly, while those furthest away should appear to move more slowly. While various versions of this technique were used throughout animated history, it was Ub Iwerks who first invented the multiplane camera. The theory on which it worked would be refined by William Garity to create the multiplane camera that would be used at Walt Disney Studios (Furniss 95). However, while the multiplane camera introduces a sense of depth in animated works, it is more so the "movement on and between [the] surfaces", or animetism, that is more prominent (Lamarre 7). This method produces a sense of a "gap between the layers" of the landscape (Lamarre 3). It was important to utilize this method of animation for my film, to reinforce the "paper cutout" style. The use of mostly animetism, as opposed to its counterpart cinematism, or movement into the space (Lamarre 7), helps to further create an experience in which the audience is slightly removed from reality. As discussed, this is one of the benefits of using animation, in that I can create a frame of mind in which the audience can absorb the message. It is not until the end of the film, where I break away from this method and put the audience "in the shoes" of the young girl that they are faced with the cup of oily water, and a question.

Today, Toon Boom has a very intuitive way of setting up individual planes to easily simulate the multiplane camera. This is crucial to my film as the multiplane camera creates depth within a 2D scene. Without that depth, I do not think that my audience would be able to have an intimate experience with the subject matter. I also use this type of camera animation to make

certain characters or objects seem to come closer to the camera, thus creating a clear focal point for the audience in certain scenes. My biggest challenge with the multiplane camera was regulating the speed at which different planes were animated across the screen to create a parallax effect. Adjusting each layer to ensure this effect was maintained was crucial. Toon Boom allowed the addition of a drop shadow using their node compositing software which further emphasized the "gap" between layers and the paper cutout effect.

Another challenge was the fact that I incorporated 3D camera movements within a 2D setup. The protester scene and the ending both include cameras and perspectives that were originally planned out in Maya's 3D environment. In these scenes, I was required to animate not just the characters, but also the backgrounds, in perspective. For the protester scene, this was accomplished by rendering out the 3D layout animation and using it to create a series of elongated images that would be used in the multiplane camera. Much like a moving background on a set, the individual layers were painted in Photoshop in perspective, so that as they slide past the camera, it appears that the view is spinning around the protagonist.
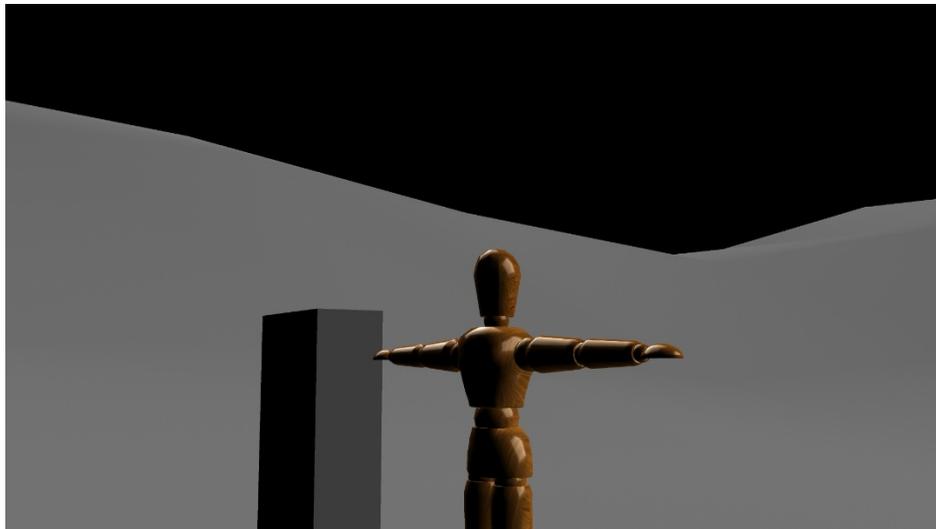
Figure 6: Frame from the 3D environment

Source: Angela Hernandez

For the last scene, this was more difficult as the pitch of the camera changes in the shot from looking up at the child to then looking down at the ground. By utilizing the style created by the multiplane camera and embracing the cutout style I designed, the background planes can

transition to create the different perspectives needed while allowing the character to seem grounded in the scenery.

In other scenes, it was required to match the 2D animation to the moving camera created in a 3D space. For example, the spinning camera around the protester. Once again, because the scene in question already existed in a 3D space, it was quite easy to place a placeholder for the character to study the changing perspectives in a 3D space, before then animating what I observed in 2D. I found that animating my characters in place, and then using the peg tool to move the drawings across the screen as part of the multiplane camera allowed them to feel more enmeshed in the scene. This way, the animations follow the same movement style created with the other multiplane objects.

<center>Combining 2D and 3D Animation</center>

The most difficult challenge was the incorporation of 3D and 2D animation. With the snake animation, it needed to appear as if it was rolling over the hills; in and out of sight. However, the rendered images of the snake included the entire mesh. So careful consideration of masking and staging was needed to make it appear as if the snake was solidly in place. This is also why I chose to first plan my cameras out in Maya, and then transfer the perspectives over to a 2D background. With this method, I was able to use those same cameras to ensure that the perspective of my 3D elements would match that of the surrounding 2D elements.
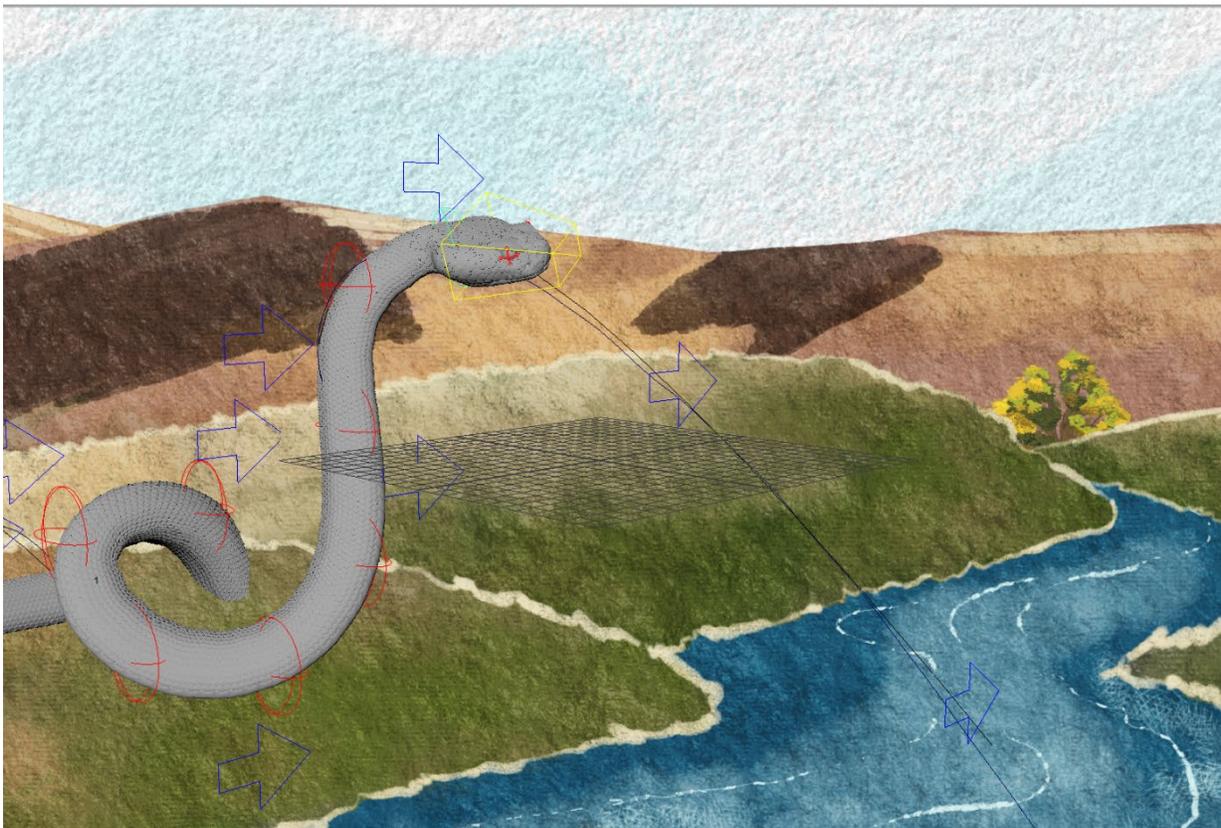
Figure 7: Screenshot of the workspace in Maya when animating the snake character

Source: Angela Hernandez

<center>20</center>

The animation of the snake was also planned out to utilize the most efficient method for the two main movements in the animation. The first type of movement, slithering across the mountains, was better accomplished by using the path animation controls packaged with the snake rig. The placement of this path could be controlled by the blue arrow icons seen in Figure 7. This resulted in a smooth introduction of the snake before it rears back. At this point, the animation technique changes. Continuing in a different file, I animated the diving of the snake into the water by keying the individual spline controls which are represented with the red circle icons seen in Figure 7. Despite utilizing two methods, the animation of the snake appears seamless as I first animated the first half of the animation, and then started the second half from the same file, starting from the ending position of the path animation. To animate the entire scene with just the path animation would have produced a lifeless character. Similarly, to animate it using only the keyframe animation would have been needlessly difficult and time-consuming.

The use of the multiplane camera also helped with incorporating this character in that two separate renderings were used; One placed behind the hill, and one placed in front. This allowed my workflow to be more efficient, as no masks were needed for the images behind the hill. In Maya, the use of a plane in the rendering process removed much of the excess parts of the snake. The resulting render would be further cleaned up in Toon Boom with additional animated masks before being composited into the scene.

Figure 8: Render of the snake animation that was placed in front of the hill

Source: Angela Hernandez

Figure 9: Same render as Figure 8, but with mask effects in Toon Boom

Source: Angela Hernandez
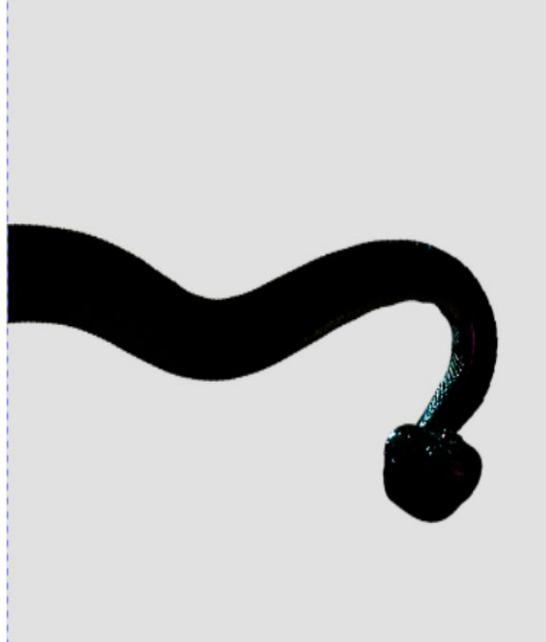
Figure 10: Render of the snake animation that is placed behind the hill

Source: Angela Hernandez

Figure 11: Completed composite of the snake with all masks and shadow effects applied.

Source: Angela Hernandez

<center>Effects</center>

Several effects were created in Toon Boom and After Effects to complete the look of the film. These effects utilize the simulated textures that can be achieved by using the turbulent noise node in Toon Boom. By selecting a variety of simulated noise textures, I was able to create three distinct effects that were incorporated into my film. Through compositing, I was able to maintain the consistency of the style. I also utilized a method of stacking, or layering, effects to make the overall look seem bespoke to the film. This shows that with careful use of computer-generated effects, a handcrafted look was achieved. This method also allowed more control over the effect by manipulating the values of the various node settings.

<center>Paper Effect</center>

While the still images of the background layers were able to have a paper texture composited onto them in Photoshop and imported into Toon Boom already textured, the animated characters of the film did not have this luxury. To save out each frame of animation, apply the texture, and re-import it into Toon Boom would be too time consuming. I knew that I needed something simulated that I could apply within Toon Boom to achieve the look desired.

Originally, I attempted to simply import the same paper texture used on the background and apply it to the animation using a multiply function. This attempt was okay, but the character seemed to blend into the background and the paper texture effect wasn't as apparent as desired. So, I then experimented with altering the paper texture to give it more depth in Toon Boom.

<center>24</center>

Figure 12: Original paper texture used for background and character effects.

Source: Nicolai at Grut Brushes. License purchased Nov 14, 2018
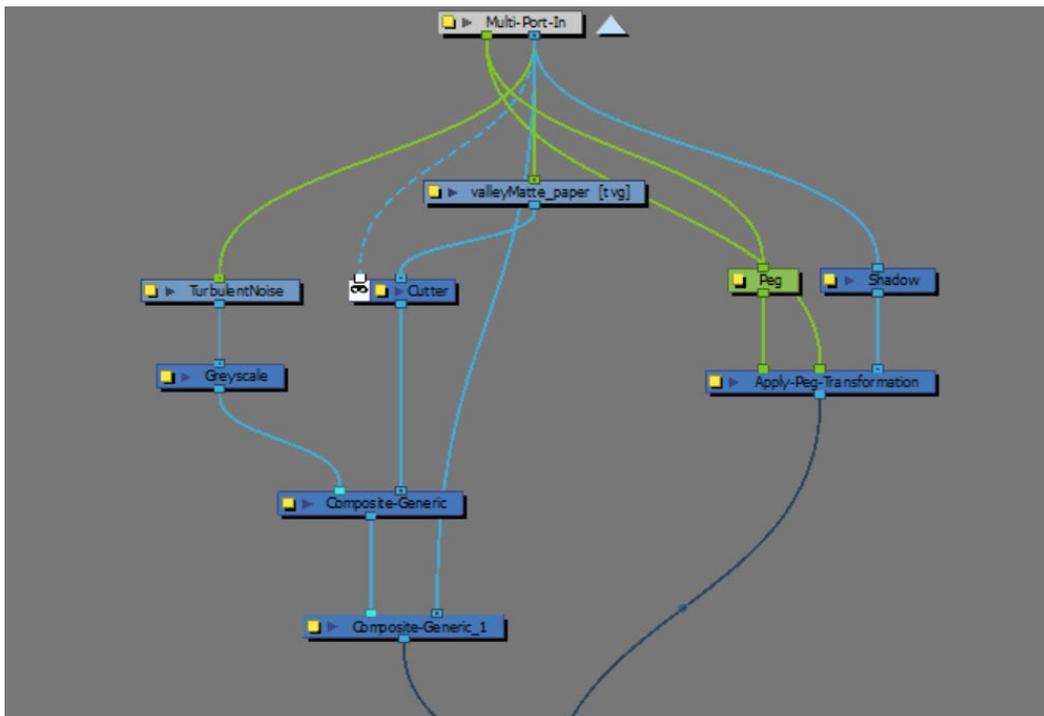

Figure 13: Screenshot of node tree in Toom Boom

Source: Angela Hernandez

Figure 13 shows the compositing process used to achieve the final effect. First, a Turbulent Noise node is inserted followed by a Greyscale node. The Turbulent Noise node will create the simulated information needed, and then the Greyscale node will turn that information into black and white visible pixels. For this effect, I used the Perlin noise type with the Fractal Brownian fractal type to create a rough-looking texture.
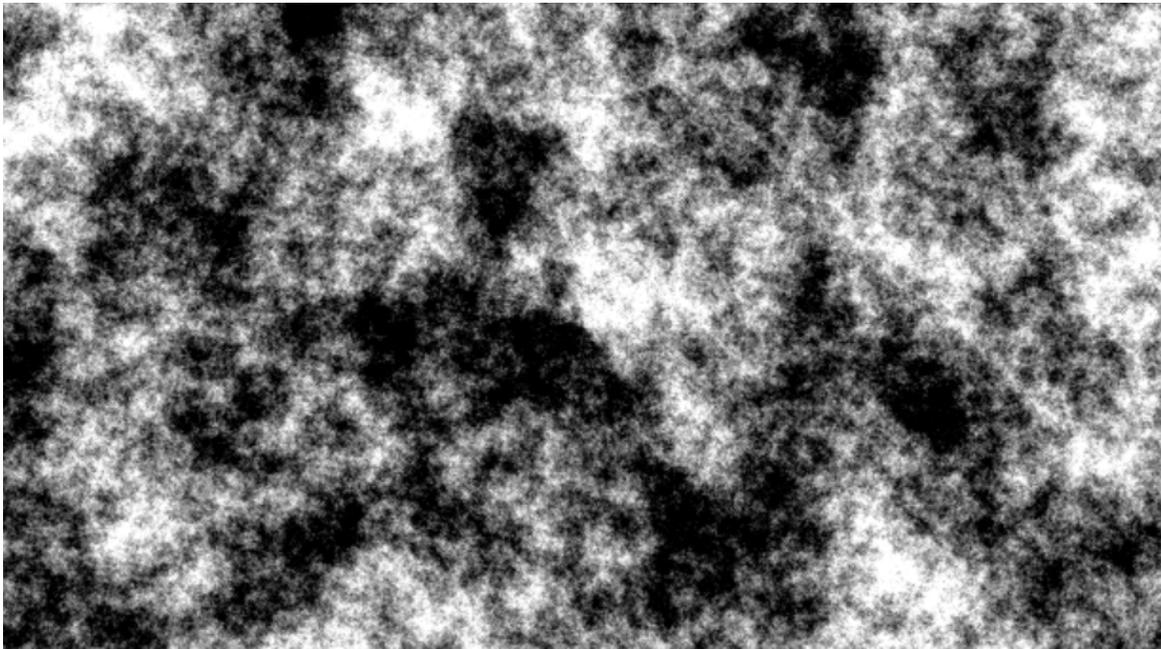

Figure 14: Results of the Turbulent Noise node for the Paper Texture
Source: Angela Hernandez

Next, I brought in the textured paper image into Toon Boom and used the Cutter node to cut out the shape of the character from that image. In this instance, inverting the mask was necessary. The result of this can be seen in Figure 15. This result and Figure 14 would be combined using a Composite Generic node set to the "softlight" blending mode with the opacity set to 75. This ensured that the dark spots of Figure 14 wouldn't be too apparent in the final result.

Figure 15: Paper texture with an inverted mask applied

Source: Angela Hernandez
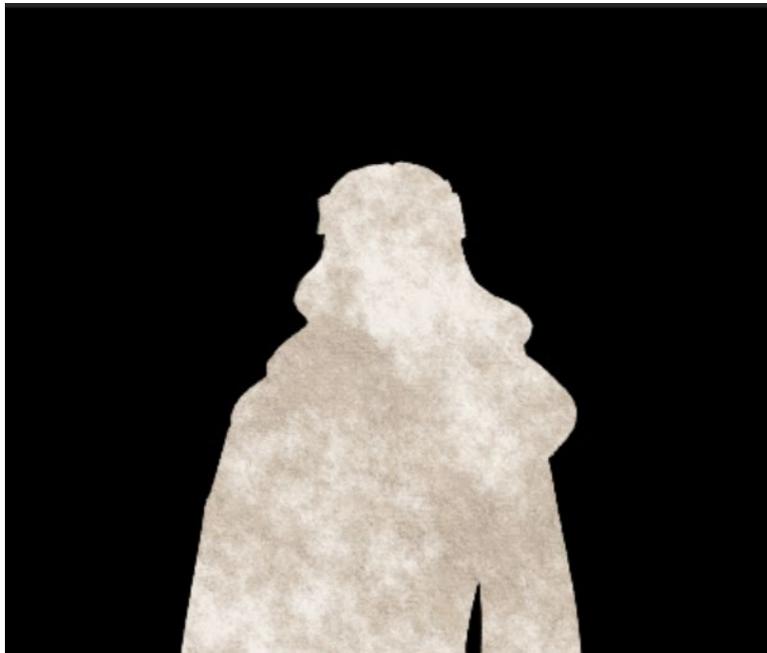
Figure 16: Paper texture composited with Figure 14

Source: Angela Hernandez

Finally, this image is composited with the animation using the Multiply blending mode. What I liked most about this effect is how the black areas of the turbulent noise act as a sort of mask for the original texture, therefore it adds more roughness to the effect and a sense of the presence of light like with the background images. With the addition of drop shadows on each element in the scene, the characters are at the same time enmeshed into the world with the use of the texture, but set apart from the background and brought forward towards the camera. The texture also introduces variance in the colors of the final animation, which helps to ground the characters to the earth and nature elements of the film.

Figure 17: Final Paper Texture effect

Source: Angela Hernandez

Figure 18: Final Paper Texture effect with background.

Source: Angela Hernandez

In some scenes, such as the scene shown in Figure 7, the water shown is still and painted in photoshop in the same manner that the other background layers are. However, in a few scenes, more depth or animated is needed to heighten the interest of the entire frame. This was accomplished by animating semi transparent layers to create a light ray effect as well as creating another simulated texture to imitate the reflections of light under the water's surface. This effect is also layered with several other effects to create the exact look needed to match the existing style.
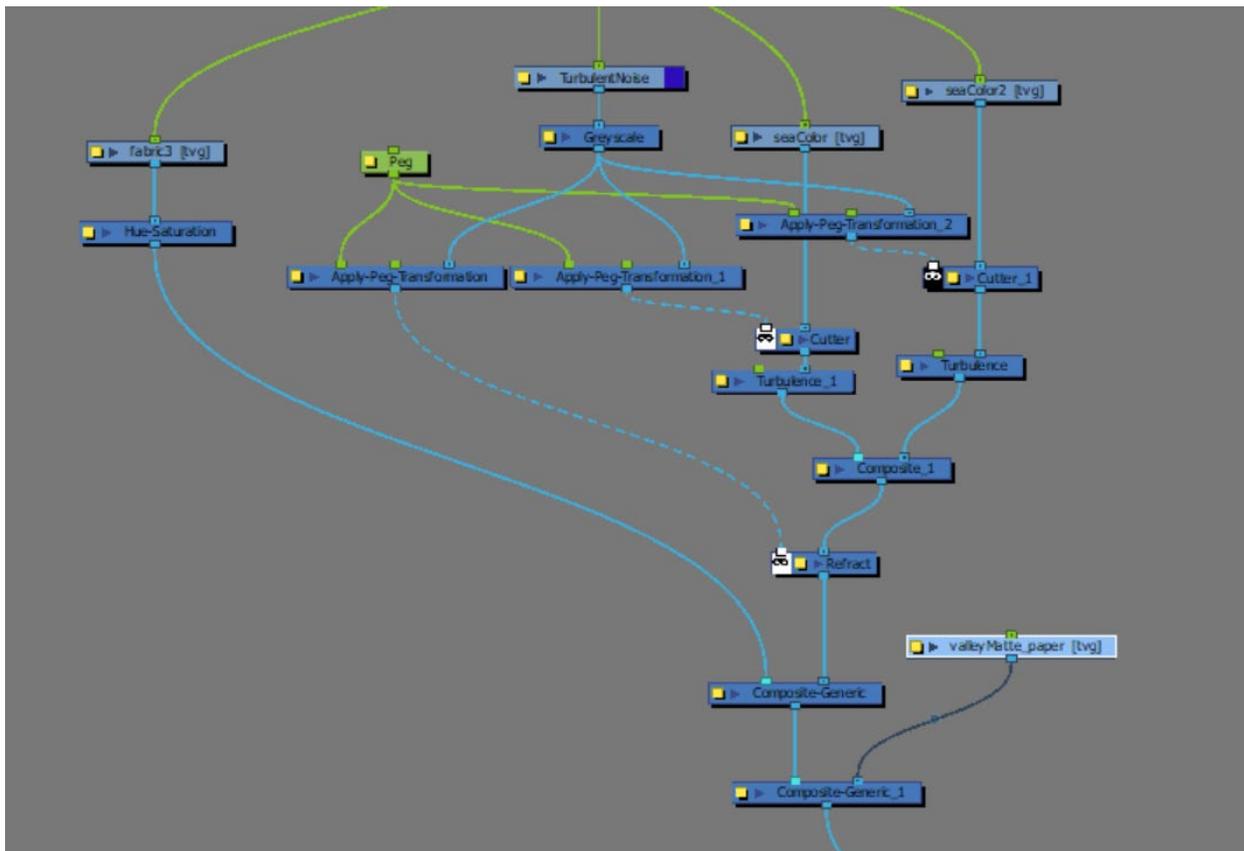

Figure 19: Node Tree in Toon Boom

Source: Angela Hernandez

For this effect we start with the Turbulent Noise and Greyscale nodes in Toon Boom. The noise type used in this effect is Small Bumps with the Terrain fractal setting. Alongside this, two color cards with different shades of blue (seaColor and seaColor2) are brought in and use Figure 20 to mask out either color. One uses the black values, and the other one is inverted and uses the white values. Each color is distorted once more with an additional Turbulence node so that the lines created in the effect are not so smooth, but rather rough and wavy.
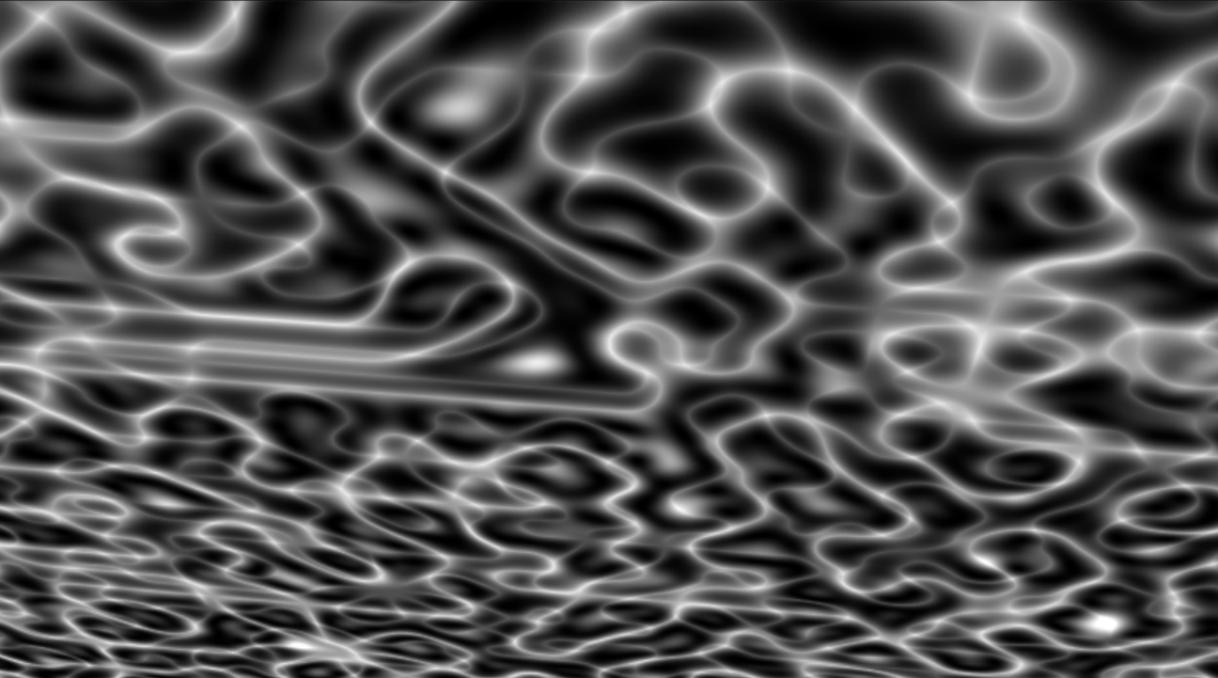
Figure 20: Result of the Turbulent Noise settings for the water effect

Source: Angela Hernandez

Figure 21: Effect with color and additional Turbulence effects added

Source: Angela Hernandez

I felt I was still missing something in the look of the water. I realized that even though they were distorted, the lines were still too thick compared to the refractions found in the real world. By adding a Refract distortion, and using the same Turbulent Noise output seen in Figure 20, the distortion affected only the white values, giving the lines a thinner, vein-like look. To further imitate the shifting light and shadows in the water, I brought in a video of some draped fabric being blown by the wind. After adjusting the hue, this was composited using the softlight blending mode. After this, the paper texture as seen in Figure 12 is also composited so that the overall effect will match the style of the other backgrounds. Out of all the effects created for this film, this one was my favorite in that it looks just as painterly as the still background layers look in the other scenes.

Figure 22: Effect with the Refract distortion applied

Source: Angela Hernandez

Figure 23: Final effect with all layers applied

Source: Angela Hernandez

To add an additional layer of depth, both visually and emotionally, painted layers of "light rays" were imported into the scene and arranged so that the eagle is drifting away from their light. This further emphasizes that America will descend if its dependence on oil continues, ensuring that the next generation will not have a bright future. Additionally, by positioning the rays using the multiplane camera, the eagle is inserted in between them, so that it appears more enmeshed in the scene.

Figure 24: Still from *2030*

Source: Angela Hernandez

Particle Effects

Additionally, particle effects using Red Giant's Trapcode software were created to add additional effects throughout the film. One such effect was that of the falling leaves from the dying tree. These effects were quite easy to create using the designer window in the Trapcode Particular designer window. Various settings such as type of emission, color, size, and gravity can be selected and animated so that it progresses over time. For example, the color of the leaves begin as a bright green when the particles are first created, but then each one will shift to a dark brown color as the life of the particle progresses. Another helpful setting was the type of emitter. By creating a shape layer in After Effects, and then using that as the source for the particles, I was able to animate the movement of the entire effect by animating the shape layer it was connected to.

Since the shape layer exists in After Effects outside of the Trapcode plugin, I was also able to use the same animated shape to animate the desaturation of the tree as well as the mask that makes the painted layers of leaves disappear. Therefore, despite this effect being comprised of several different animations, the overall movement is consistent throughout and the animations are staggered so that is appears as if the disease came upon the tree in a wave.
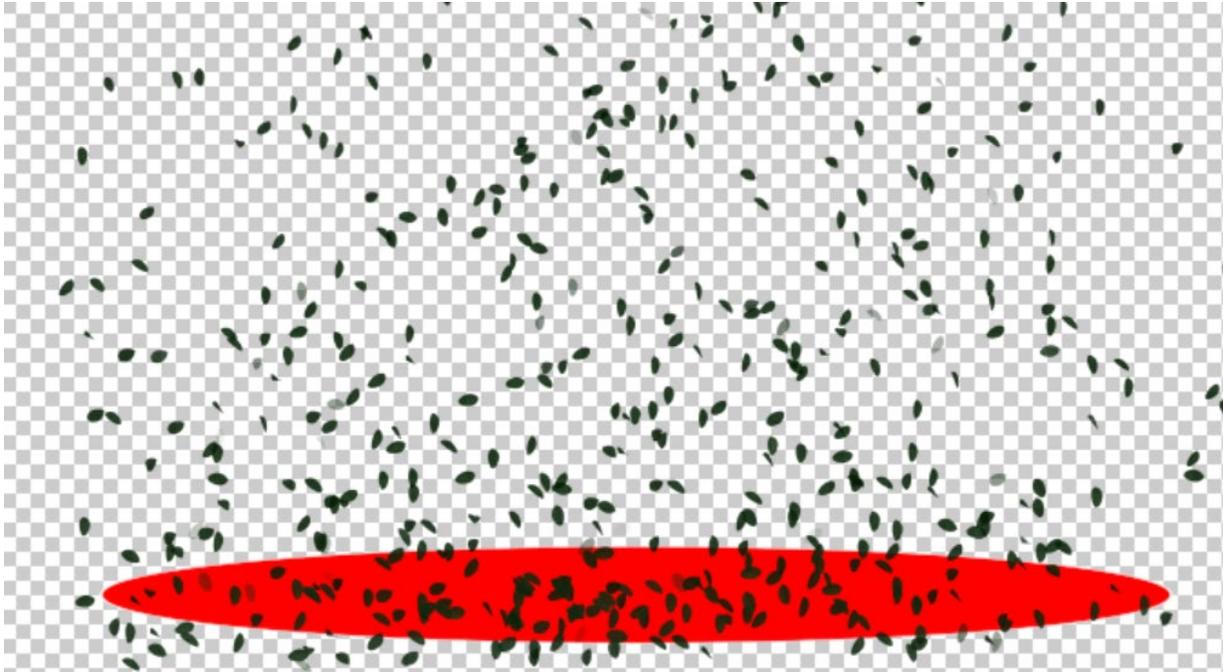
Figure 25: Shape Layer (in Red) with the particle effect

Source: Angela Hernandez

Figure 26: The particles follow the shape.

Source: Angela Hernandez

Figure 27: Particle Effect with rest of composition

Source: Angela Hernandez

CHAPTER SIX: CONCLUSION

As someone who has always wanted to "be the change you want to see in the world", I have strived to use my abilities as an artist to help shepherd that change. This film, *2030*, is the culmination of my skills thus far to create an emotional piece that I hope will have a lasting impact on the world around us. Looking back on the reasoning in which I started this project, I think to the theory of the "Tragedy of the Commons" first introduced by William Foster Lloyd in 1833. To put simply, this theory states that when there is a shared space or commodity, those in the community who use it often do so in selfish ways which results in the commodity being used up. Whereas it would be of more benefit to everyone for them to only use what is needed so that there is enough to go around and to ensure that the commodity is not depleted (Lloyd). We are currently seeing a worldwide phenomenon of this theory in which goods and resources are being used at exponential rates to supply an ever-increasing thirst for food, energy, and all manner of commercial products. This is not a sustainable model according to Lloyd's theory, and we as a global community must change our ways and adapt to one that is.

The second thought that persists in my mind is what is commonly called the "Serenity Prayer" written by Reinhold Niebuhr and is as follows:

> God, grant me the serenity to accept the things I cannot change,
>
> The courage to change the things I can
>
> And the wisdom to know the difference.

The ever-looming issue that is climate change may seem to be one of the things I "cannot change". Acting alone, this is true for anyone. One person alone cannot make lasting change in any aspect of issues that affect the whole globe. However, each person doing what they can

towards a common goal will. *2030* is one of my acts. I can only hope that the emotion, urgency, and courage that is shown through my work will inspire others to join in and do their part as well. While on the outside, one may see this prayer as an acceptance of whatever happens in your life and believing that you have no control over your fate, I see it as a question of "how far can one go?". What, exactly, is out of our reach as humans? When working together, we have achieved amazing feats both in the ancient and modern worlds. We have moved mountains and touched the stars. The issue presented by this film is a complex and large one, but we have the power to address it if we collectively work together and unite our voices. Just recently, Judge James Boasberg ordered the Dakota Access Pipeline to shut down so that an "additional environmental review" can be done (Kolpack). This is the result of the protesters' time and sacrifice spent on this issue.

In the future, I would like to continue to explore and promote the use of animation to make more positive changes in both my immediate community and my expanded ones. Just as humans are only limited by our imagination in what we can do, so to is animation. It is a medium with endless possibilities that makes it so incredibly versatile. Therefore, I know that no matter what cause or issue I decide to address next, animation will still be a suitable medium to reach as many people as possible. Only together will we be able to make an impact.

APPENDIX A: COPYRIGHT PERMISSIONS

RE: Contact Us [#1254]

Info SHP <info@sandyhookpromise.org>
Tue 3/24/2020 4:29 PM
To: Angela Hernandez-Carlson <Angela.Hernandez@ucf.edu>

Hello Angela,

Thank you for reaching out. I've contacted our marketing team and they are very happy to provide you permission to use the images in our PSA.

Good luck in your work.

Warmest Regards,
Tracy Piccuillo
Office Associate
203-304-9780
tracy.piccuillo@sandyhookpromise.org

PO Box 3489
Newtown, CT 06470

sandyhookpromise.org
facebook.com/SandyHookPromise
twitter.com/sandyhook
Instagram: @sandyhookpromise

From: Wufoo <no-reply@wufoo.com>
Sent: Tuesday, March 24, 2020 2:23 PM
To: Info SHP <info@sandyhookpromise.org>
Subject: Contact Us [#1254]

First Name: *	Angela
Last Name: *	Hernandez-Carlson
Email *	angela.hernandez@ucf.edu
Address:	5195 Burgess Ave
City:	Cocoa
State:	FLORIDA
ZIP Code: *	329274854

Phone Number:	(321) 458-8371
Comments:	Hello! I am a graduate student at the University of Central Florida. I am writing a thesis paper about animated PSA's and how their medium allows more leniency in terms of what can be shown in the ad. I would like to be able to use a couple of still images from your 2019 PSA "Back-To-School Essentials" in my paper. Would you know who I could talk to in order to receive such permission? Best Regards, Angela Hernandez
Subject:	Other

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APPENDIX B: COPYRIGHT PERMISSIONS

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Credit: Advert for Pears' Soap. Credit: Wellcome Collection. Attribution 4.0 International (CC BY 4.0)

45

About this work

Description

Ephemera Collection. Advertisement for Pears' Soap Caption reads, "Matchless for the complexion..." Illustration of 'before and after' use of soap by black child in the bath. Showing soap washes off his dark complexion.

Type/Technique

Magazine inserts

Subjects

19TH CENTURY?   GC

Where to find it

Wellcome library

Identifiers

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REFERENCES

@natasharesists. "This is an emotional punch in the gut. I don't think I've ever seen a more harrowing PSA, so please show it to people who don't believe we need better #GunControlNow. You will know by their reaction if they're worth your time. #SandyHookPromise #BackToSch." *Twitter*. 18 September 2019.

Awake: A Dream From Standing Rock. Dir. James Spione, Josh Fox, Myron Dewey. 2017.

Back-To-School Essentials. Dir. Henry-Alex Rubin. 2019. Online.

Barajas, Joshua. "Police deploy water hoses, tear gas against Standing Rock protesters." *PBS News Hour*. 21 Nov 2016. Web.

Bellware, Kim. "This back-to-school PSA from Sandy Hook Promise is a punch in the gut." 18 September 2019. *The Washington Post.* Article. 24 January 2020.

Braun, Adee. "Turning Bacon Into Bombs: The American Fat Salvage Committee." 18 April 2014. *The Atlantic.* Web. 5 June 2019.

Criss, Doug. "Sandy Hook Promise's chilling back-to-school PSA hopes to prevent mass shootings." 18 September 2019. *CNN.* Article. 24 January 2020.

Crow, Jonathan. "Winsor McCay Animates the Sinking of the Lusitania in a Beautiful Propaganda Film (1918)." 6 May 2014. *Open Culture.* Web. 10 January 2020.

Funk, Cary, Brian Kennedy. *How Americans see Climate Change in 5 Charts*. 19 April 2019. Web. 4 February 2020.

Furniss, Maureen. *A New History of Animation*. New York: Thames & Hudson, 2016. Print.

Ghen Cô Vy. Dir. Khac Hung. 2020. Online.

King, Ledyard. *Many Young Voters Sat Out Super Tuesday, Contributing to Bernie Sanders' Losses*. 4 March 2020. Web. 10 March 2020.

Kolpack, Dave. "Judge Orders Dakota Access Pipeline Shut Down Pending Review." *AP*. 6 July 2020. Web.

Lamarre, Thomas. *The Anime Machine A Media Theory of Animation*. Minneapolis: University of Minnesota Press, 2009. Print.

Lloyd, William Foster. "W.F. Lloyd on the Checks to Population." *Population and Development Review* (1980): 24. Web.

Monster in the Closet. Dir. Yves Geleyn. 2014. Online.

Niebuhr, Reinhold. "The Serenity Prayer." 1932.

O'Barr, William M. "Public Service Advertising and Propaganda." *Project MUSE* 13.2 (2012). 10 April 2020. <https://muse.jhu.edu/article/484935>.

Out of the Frying Pan, Into the Firing Line. Dir. Ben Sharpsteen. 1942. Online.

Parker, Kim, Nikki Graf, Ruth Igielnik. "Generation Z Looks a Lot Like Millennials on Key Social and Political Issues." 17 January 2019. *Pew Research Center.* Web. 25 March 2020.

Stokes, Bruce, Richard Wike, and Jill Carle. "Concern about Climate Change and Its Consequences." *Global Concern About Climate Change, Broad Support for Limiting Emissions*. 5 November 2015. Web. 17 August 2019.

The Sinking of the Lusitania. Dir. Winsor McCay. Retrieved from the Library of Congress, 1918. Video. <https://www.loc.gov/item/mbrs01208297>.

United Nations. *Climate Change*. n.d. Web. 4 August 2019. <https://www.un.org/en/sections/issues-depth/climate-change/>.

Wong, Julia Carrie. "Dakota Access pipeline protester 'may lose her arm' after police standoff." *The Guardian*. 22 Nov 2016. Web.

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[i] "Tik Tok" refers to a popular social media platform where users are able to create and show videos as well as audio clips that other users can include in their videos.

[ii] "Going Viral" refers to the process by which a video or story online is spread very quickly in a short amount of time.