

ANALYZING CLIMATE CHANGE MESSAGES IN ANIMATED MOVIES: ANIMATION'S ROLE IN ENVIRONMENTAL AWARENESS

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Abstract

The relationship between humanity and nature is complex, extending far beyond academic study. Animated movies with compelling narratives have the ability to connect individuals with nature in ways that science alone cannot achieve. To successfully communicate information about climate change, a pragmatic approach that encourages positive responses is essential. Utilizing movies, which have the power to captivate and inspire, is an effective way to achieve this goal. Through the use of animation, meaningful visualizations of climate change have been recognized as a means to bridge the gap between complex scientific issues and people's daily experiences. Walt Disney's animated movies have played a crucial role in shaping societal attitudes and beliefs regarding the environment. Over the past decade, Disney has produced a series of films with environmental themes. It is important to examine the extent to which these movies address the issue of climate change. This paper aims to assess how animated movies have dealt with climate change by analyzing selected films from this leading producer.

Keywords: animated movies, Disney, climate change, human-nature relationship, climate change literacy, animation, content analysis

Introduction

Due to technological improvements and its advantages as a communication tool, animation has emerged as a key medium for environmental communication. It can challenge dominant narratives and power systems relating to the environment, provoke emotions and empathy, and communicate complicated scientific concepts through engaging pictures. Due to its obscurity, complexity, and difficulty of perception, climate change is a difficult topic to communicate, and media communication is vital in determining public perception and interest. The public's primary source of information regarding climate change is mass media, including television, newspapers, and the internet. As such, it is crucial for influencing how the public views and reacts to the issue [1].

Animation and Climate Change

A large audience may be reached and engaged by using animation to effectively communicate the difficult science and effects of climate change. It is possible to easily grasp and depict complicated events and processes, such as air circulation and ocean currents, by employing animation [2]. In order to increase awareness and comprehension of the problem, animations can also be used to demonstrate the probable future effects of climate change, such as sea level rise, droughts, and stronger storms [3]. Younger audiences, who are probably

the ones who will be most impacted by the long-term effects of climate change, can also be engaged and educated through the use of animation [4]. Children can learn about the science of climate change and the value of taking action to lessen its effects by watching animations in educational settings like schools and museums [5].

The use of animation in climate change advocacy and action is also possible. Animations can serve to mobilize public support for policies and actions that address climate change, such as lowering greenhouse gas emissions and encouraging sustainable behaviours, by highlighting the possible implications of climate change and the urgent need for action [6]. Overall, animation has the potential to be a potent tool for promoting climate change understanding, action, and awareness.

Animations are a powerful tool for explaining climate change, according to numerous studies. Investigating the effects of animated videos on climate change education among a group of Spanish high school students was the goal of a study by Pascual-Miguel and Ferrández-Villena. Two sets of students were taught about climate change by the researchers in an experimental study, with one group being given an animated movie and the other being instructed by more conventional means, such as lectures and discussions. The study's findings revealed that pupils who viewed the animated movie had much more knowledge about climate change than the group who received standard instruction. Additionally, compared to the other group, the students who saw the movie expressed greater levels of interest and engagement with the subject [7].

Literature Review

Climate change and role of Media

In influencing public opinion and raising knowledge about climate change, the media is crucial. People can learn about the science behind climate change, its effects, and potential solutions from media sources such as news organizations, social media sites, and entertainment media.

The media has a big impact on how people view and understand climate change. Media representations can provide accurate information to the public on the causes, effects, and possible responses to climate change. Studies show that the media plays a significant role in how individuals learn about climate change, particularly when they are looking for information. Uncertainty exists regarding the effectiveness of the media in educating people about climate change when they unknowingly do so through their usual media intake.

Recent research has examined the impact of the media on public perceptions about climate change. Researchers from Yale and George Mason University found that media coverage of the problem had a major impact on public participation in and concern over climate change. According to a study that examined survey data from 35 countries, people who read more climate-related news are more likely to be concerned about climate change and take action to address it [8]. A different study found that how climate change is portrayed in the media can influence how the general public feels about the issue. When articles highlighted the benefits of addressing climate change, readers were more likely to see them as credible and trustworthy, according to the study, which examined news items from 20 different countries (such as job development and enhanced public health) [9].

Animation and environmental media

Maxwell T. Boykoff and Amy Lynn Fletcher's [10] study "Animating Climate Change: How Cinema, TV, and Social Media Communicate the Science and Politics of Global Warming"

examines how various media, such as film, television, and social media, influence public discourse on climate change. To explore how they portray climate science, policy, and activism, the authors analyze a variety of media products, including documentaries, feature films, news programs, and web videos. They contend that media has a significant impact on how the public views climate change and that various media outlets have varied advantages and disadvantages in this area. The study highlights a number of important conclusions, including the value of personalization and emotional appeals in enticing audiences to learn about climate change, the significance of visual imagery in explaining difficult scientific ideas, and the potential for media to subvert dominant narratives and power structures related to climate change. According to the study, media has a significant impact on how the public perceives and reacts to climate change, and various media outlets can be strategically employed to engage and mobilize certain audiences.

Theoretical Framework

Cultivation Theory

Cultivation theory suggests that over time, media exposure moulds or cultivates a person's perception of social reality. According to this hypothesis, people are more likely to internalise the attitudes and values that are given in media content the more time they spend consuming it. The idea was first put up by George Gerbner [11], and it has since been thoroughly researched in relation to television, particularly in regards to how it affects people's attitudes and views about crime, violence, and societal standards. According to the cultivation theory, even if a person's ideas and beliefs about the world aren't necessary based on their own experiences, repeated exposure to media content can have a long-lasting impact on those perceptions and beliefs. According to the cultivation theory, seeing animated films with a climate change topic may make people more aware of environmental issues and more concerned about them.

For instance, if someone sees several animated movies with a strong environmental message, like Wall-E or FernGully, they might start to develop more pro-environmental attitudes and behaviours and become more conscious of the effects of human activity on the environment. This is so that an individual's vision of reality and what they value can be shaped by repeated exposure to messages.

Research Objectives

Upon reviewing various forms of literature, the aim of this paper can be stated as follows:

1. To chart the ascent of animated movies as a means of promoting climate change literacy.
2. To explore how the notion of climate change is portrayed in popular animated films.

Research Methodology

To achieve the first objective, the researcher conducted an extensive literature review to comprehend the emergence of animated movies as a means of promoting climate change literacy.

Representation of environment in animated movies

Animation, historically a labour- and resource-intensive art, has become a widely used method for representing the environment due to the accessibility and user-friendliness of digital technologies. Environmental animation is now used in amateur movies on Web 2.0

platforms, environmental outreach initiatives, and scientific visualizations, in addition to film and television. The increasing significance of environmental animation in communication can be attributed to technological advancements as well as the aesthetic and cultural benefits of animation as a medium.

According to Nicole Starosielski, environmental animation is a form of media that intentionally utilizes animated form to generate subjectivities and knowledge about social and ecological processes related to the environment. It draws attention to animation's benefits, including abstraction, simplification, and the ability to emphasize environmental topics and ideas. The sample lists three distinct representational practices that environmental animation might accomplish: depicting environmental *mutability*, illustrating environmental *interaction*, and exposing the environment as a *construct*. In her exploration of animation's potential as a tool for environmental representation, Nicole Starosielski argues that it provides aesthetic options that challenge the predominance of indexical media in environmental communication.

In his research, the author identifies three stages of environmental animation and examines how each stage has transformed the portrayal of the environment. The first era, from the 1960s through the early 1970s, saw the emergence of short films that highlighted the mutability of the environment. The second period, from the late 1980s to the early 1990s, expanded the possibilities of environmental engagement with feature films. In the third period, which spans from 2005 to the present, films have started to consider the environment as a visual component. In conclusion, the study asserts that animation provides a unique and powerful approach to representing imperceptible, ambiguous, and interacting worlds [12].

Mainstream animated movies and climate change

The discussion surrounding climate change has greatly benefited from animated films, particularly in terms of increasing public awareness of environmental issues and their potential social repercussions. Animation provides an entertaining and comprehensible way to represent complex environmental systems and processes. Through the use of vivid colours, emotive characters, and innovative storytelling, animation has the ability to capture viewers' attention and imagination, particularly children and young people who may be more responsive to messages delivered in an enjoyable and visually appealing way.

One of animation's most significant contributions to the conversation about climate change is its capacity to foster empathy and an emotional bond between viewers and the environment. By portraying environmental challenges in relatable and engaging ways, animation may inspire a sense of responsibility and environmental stewardship. For example, films such as *The Lorax* and *FernGully: The Last Rainforest* showcase the devastating consequences of environmental degradation and motivate audiences to take action to preserve nature [13].

Additionally, animated films possess the ability to challenge prevalent social norms and cultural beliefs regarding the environment. For example, the Disney movie *"Pocahontas"* emphasizes the importance of appreciating and coexisting with nature while condemning imperialist and capitalist attitudes towards the environment. Similarly, the Studio Ghibli film *"Princess Mononoke"* critiques industrialization and environmental destruction while promoting sustainability and cohabitation. Furthermore, *"Cars"* features Lightning McQueen, a race car, discovering the value of renewable energy and environmental sustainability while stranded in a small town that relies on solar energy. The movie consistently underscores the significance of reducing carbon emissions and promoting alternative energy sources.

In "Finding Nemo" by Pixar, the protagonist clownfish named Marlin searches for his missing son, who has been taken from the ocean and placed in a fish tank. The film emphasizes the importance of preserving ocean environments and the wildlife that inhabits them. Another example is the 2016 movie "Zootopia," which highlights the necessity of conservation efforts and how climate change can affect ecosystems. The movie portrays the detrimental effects of unchecked urbanization and industrialization while advocating for the conservation of wildlife and their natural habitats. Research has revealed that although climate change is infrequently addressed in these films, it is frequently depicted as a secondary theme or an ecological peril that must be resolved. The research also discovered that individual actions, rather than systemic changes, were frequently emphasized in the films' solutions [14]. Furthermore, the study also revealed that young people's knowledge, attitudes, and behavioural intentions about the environment can be enhanced through exposure to animated films that contain environmental messages. It indicated that environmental messages in animated films were more effective in enhancing environmental knowledge and attitudes [15]. A different study revealed that exposure to environmental animated media had a significant impact. Participants reported an increase in environmental concern, pro-environmental attitudes, and behavioural intentions to engage in pro-environmental actions after the exposure [16].



The above discussion highlights that animated movies are a crucial and effective tool for promoting climate change literacy.

In relation to the second objective, a content analysis was conducted on Disney's animated movies released between 2013 and 2022 to determine how the concept of climate change is portrayed in popular animated films.

The film selection approach

The study utilizes qualitative research methods, specifically content analysis, to examine animated movies that address climate change. The researcher has chosen four animated movies produced by Disney between 2013 and 2022 that focus on climate change as their theme.

Selection of movies

1) Frozen (2013)

Director: Jennifer Lee and Chris Buck

Central Character: Elsa, Anna, Olaf, Kristoff, Hans, Oaken

Duration: 1 hour 42 minutes

Storyline

Elsa and Anna, two sisters who reside in the Arendelle realm, are the main characters of the story. Elsa's parents decided to keep her apart from society because she was born with the ability to create ice and snow, but this has not always been the case. After the terrible loss of her parents, Elsa becomes the ruler of Arendelle. However, during her coronation, her powers are revealed, causing her to run away into the mountains out of fear of being misunderstood.

Anna sets off on a mission to reunite Elsa with their kingdom and bring peace to it. Along the way, she meets Kristoff, a tough ice merchant, and Sven, his reindeer. Together, they come upon some magical trolls who teach Anna about the significance of sisterhood and the extent of Elsa's abilities. Meanwhile, Elsa constructs an icy palace for herself, but unintentionally causes a perpetual winter to descend upon the kingdom, causing turmoil and danger. Anna sets off on a mission to bring Elsa back and restore peace to their kingdom. She encounters Kristoff and Sven along the way, and together, they learn more about Elsa's abilities and the importance of sisterhood. Elsa eventually learns to control her powers thanks to Anna's genuine act of love, and the never-ending winter is finally brought to an end. The kingdom is restored to its former glory, the sisters reconcile, and Anna and Kristoff fall in love.



Analysis

Although not explicitly about it, "Frozen" can be interpreted through the lens of climate change due to its main theme of human impact on the ecosystem. The film portrays humans' ability to modify nature for better or worse, as exemplified by Elsa's power to create ice and snow. Elsa's fear of her abilities and her seclusion from society can be viewed as a metaphor for how people have historically approached the environment, often seeking to dominate and control it with disastrous consequences. Elsa inadvertently causes an endless winter in the kingdom of Arendelle, which can be seen as a metaphor for the long-term effects of human activity on the environment, such as climate change. The perilous winter weather poses a threat to the kingdom's inhabitants, endangering their lives and well-being. "Frozen" serves as a cautionary tale about the importance of respecting and collaborating with nature rather than attempting to master it. By treating the environment with care and accountability, humans have the ability to make a positive difference.

2) Moana (2016)

Director: Jon Musker and Ron Clements

Central Character: Moana, Maui, Chief Tui, Gramma Tala, Sina, Te-Fiti, Te-Ka

Duration: 1 hour 47 minutes

Storyline

The plot revolves around Moana, the daughter of the chief on the Polynesian island of Motunui. In order to save her island from a curse that is threatening the entire ocean, Moana is chosen by the ocean to undertake a mission. Despite her father's objections, Moana embarks on a journey to find the demigod Maui and retrieve the heart of the goddess TeFiti, which was taken by Maui and is the cause of the curse. Along the way, Moana faces numerous challenges, including terrifying sea creatures and Maui's initial reluctance to assist her. She eventually convinces Maui to join her on the quest, and together they embark on a magnificent adventure to save the ocean and restore the heart of TeFiti.

Analysis

The film "Moana" highlights the importance of protecting the ocean and maintaining the balance of nature, which are both critical issues related to climate change. Moana's journey can be viewed as a metaphor for the impact of human activity on the environment. The curse

that is spreading across the seas due to the theft of TeFiti's heart represents the damage that humans have inflicted on the ecosystem through actions such as pollution and overfishing. Moana, who is chosen by the ocean to save her island and restore harmony to nature, can be interpreted as a symbol of the urgent need to take action to protect the environment. Maui represents the self-centered mindset that often leads to the exploitation of natural resources because he initially takes TeFiti's heart for his own benefit. However, Maui ultimately recognizes the error of his ways and joins Moana in her quest to heal the broken heart and repair the damage.

3) Frozen 2 (2019)

Director: Jennifer Lee and Chris Buck

Central Character: Elsa, Anna, Olaf, Kristoff, Queen Iduna, King Agnarr, Lieutenant Destin Mattias, Yelena, King Runeard, Bruni

Duration: 1 hour 44 minutes

Storyline

The popular Disney animated film "Frozen" has a sequel named "Frozen 2." The story follows Elsa, Anna, Kristoff, Olaf, and Sven as they embark on a quest to uncover the source of an enigmatic voice that only Elsa can hear. The events of the story take place three years after the first film. Elsa, accompanied by Anna, Kristoff, Olaf, and Sven, sets out on a journey to the Enchanted Forest to unravel the mystery of the voice. The Enchanted Forest was once the homeland of the Northuldra tribe. Along the way, they encounter various challenges such as treacherous waterways, dangerous rock formations, and a group of Arendelle soldiers who try to stop them. As they venture deeper into the forest, they discover that the voice Elsa hears belongs to a powerful elemental spirit known as the "Fifth Spirit." Elsa realizes that she is the Fifth Spirit and that the four elemental spirits of the forest, namely earth, air, fire, and water, require her abilities to maintain balance. While Elsa strives to restore balance to the forest's ecosystem, Anna, Kristoff, Olaf, and Sven face their own challenges and obstacles. Olaf comes to terms with the possibility that he is not immortal, and Kristoff searches for the perfect moment to propose to Anna. Eventually, Elsa succeeds in restoring balance to the forest and uncovers the truth about her family's past. Upon returning to Arendelle, Elsa helps Anna become the new ruler, and Kristoff and Anna publicly declare their love for each other.

Analysis

The main theme of the movie is the impact of human activity on the environment. The film's emphasis on restoring the balance of the four elemental spirits, earth, air, fire, and water, can be interpreted as a metaphor for how climate change affects the natural world. The Enchanted Forest's beautiful setting, which was previously home to the Northuldra tribe, serves as a metaphor for the damage that humans have inflicted on the environment. Human activities have damaged the forest, throwing the elemental spirits out of balance and leading to dangerous natural disasters. Elsa's journey to become the Fifth Spirit and restore harmony to the forest is comparable to the efforts people must make to halt climate change. Humans must reduce their impact on the environment



and bring balance back to the natural world, as Elsa uses her abilities to bring the elemental spirits back into harmony. The film's message, which emphasizes the need to embrace change and adapt to new circumstances, can also be interpreted as reflecting the need for people to adjust to a changing climate. We can draw inspiration from the characters' willingness to collaborate and support one another, as well as their openness to learning and changing their perspectives. The movie reminds us of the importance of appreciating and cooperating with the environment, as well as the need for people to take action to prevent climate change and restore natural balance.

4) *Strange World* (2022)

Director: Don Hall

Central Characters: Searcher Clade, Jaeger Clade, Meridian Clade, Ethan Clade, Callisto Mal

Duration- 1 hour 41 minutes

Storyline

In Avalonia, Jaeger Clade and his son Searcher are renowned adventurers. They stumble upon a green plant called Pando, which proves to be an efficient source of fuel for the countryside. Twenty-five years later, Callisto Mal approaches Searcher for help in investigating why Pando is losing its power. In their quest to trace the origins of Pando, Searcher and a group of explorers encounter various creatures from the Strange World. Ultimately, they discover that Pando is a virus that is eroding the heart, or foundation, of a gigantic turtle-like creature. To save the creature's heart, revive the land, and eradicate Pando, the family must unite and work together. After a year, Avalonia transitions to wind farms, and the relationships within the family become even stronger.

Analysis

The connection between the movie's central theme and the real world is the fossil fuels that Pando represents. Searcher discovered them in the distant mountains, and now they are depleting, putting the well-being of Avalonia at risk as they are the sole source of electricity for the neighbourhood. Pando serves as a rallying cry for the fossil fuel sector, with Searcher, their discoverer, being compared to the head of big oil. Similarly, the mayor of Avalonia exhibits the same reluctance to divest that is demonstrated by fossil fuel corporations and political figures in the real world. *Strange World* conveys the idea that everything in our world is interconnected. The animals that Searcher and Ethan encounter represent the world's immune system, and as they journey to the center of their world, they discover that Pando, the energy source for Avalonia, is interconnected through a significant root system. They realize that Pando is a disease that is harming the turtle and that Avalonia and the Weird World they are exploring are both parts of one enormous organism. The film underscores the need to limit exploitation of the land and its resources by demonstrating how environmental destruction directly impacts people. However, this perspective is anthropocentric and disregards the inherent worth of the planet. Selecting Turtle Island as a character also indicates the connection between indigenous stories and the belief in connectedness.



Conclusion

In recent years, there has been a significant increase in movies and other forms of media that address climate change and its impacts. Notably, *Frozen*, *Moana*, *Frozen 2*, and *Strange World* have emerged as essential tools for climate change literacy, increasing awareness of the critical environmental challenges facing our planet. These movies are effective in portraying the consequences of human activities on the environment in an engaging and relatable way. Through compelling storylines and relatable characters, they depict the devastating effects of climate change, making it easier for viewers to understand and relate to the issue.

Furthermore, these films promote solutions and encourage individual and collective action to address climate change. They demonstrate the importance of reducing our carbon footprint, protecting natural resources, and working together to address the impacts of climate change. As such, these movies have become powerful tools for climate change literacy, inspiring audiences to take small steps towards protecting the environment. Their themes of balance, harmony, and the interconnectivity of nature have helped audiences understand the impact of human activity on the environment and the urgent need for sustainability.

The messages of these movies are particularly crucial for younger generations, who will shape our future and make decisions that affect the environment. Therefore, the impact of these movies goes beyond entertainment, serving as a call to action for viewers to take responsibility and make positive changes towards a more sustainable future. *Frozen* and *Frozen 2* emphasize the need to restore balance to the natural world, while *Moana* highlights the importance of protecting the ocean and maintaining balance in nature. These movies also demonstrate the need for accountability and care in human actions towards the environment. Similarly, *Strange World* underscores the consequences of exploiting the land and its resources and the importance of limiting environmental destruction to prevent the impact of climate change.

The trend in these films is a growing awareness of the impact of human activity on the environment and the importance of taking action to prevent climate change. Each movie portrays a cautionary tale that highlights the consequences of neglecting the environment and emphasizes the importance of respecting and cooperating with nature. Overall, the emergence of climate change themes in popular culture, including movies like *Frozen*, *Moana*, *Frozen 2*, and *Strange World*, is a positive development that can help inspire a global movement for environmental action. These films have played a critical role in educating audiences on the need for climate change literacy and action, contributing to the trend of media that focuses on highlighting the impact of climate change and how we can take action to protect our planet. By raising awareness and promoting solutions, these films are contributing to a growing understanding of the need for urgent action to protect our planet for future generations.

References

1. Kushwaha, V. S. (2015). Mass Media in Disseminating Environmental Awareness. *International Journal of Research- Granthalayah*, 1-4.
2. Schafer, M. (2015). Climate Change and the Media. In *International Encyclopedia of the Social and Behavioral Sciences* (2 ed., Vol. 3). Elsevier.
3. Alexander, A., & Aram, I. (2019). Communicating Climate Change through Cartoons. *Journal of Media and Communication*, 3(1), 67-84. Retrieved May 2022

4. Toledo, M. A., Yangco, R. T., & Espinosa, A. A. (2014). Media Cartoons: Effects on Issue Resolution in Environmental Education. *International Electronic Journal of Environmental Education*, 19-51.
5. Topaltsis, L., Plaka, V., & Skanavis, C. (2018). Raising Awareness on Climate Change through Humor. *Protection and Restoration of the Environment XIV*, (pp. 189-198).
6. Kate, M. (2012). Earthworks: The Geopolitical visions of Climate Change Cartoons. *Political Geography*. doi:<http://dx.doi.org/10.1016/j.polgeo.2012.09.001>
7. Pascual-Miguel, F., & Ferrandez-Villena, M. (2020). The Effect of Animated Videos in Climate Change Education: An Empirical Study. *Environmental Education Research*, 26(6), 856-893.
8. Maibach, E., Leiserowitz, A., Rosenthal, S., & Kotcher, J. (2020, April). *Climate Change in American Mind*. Yale and George Mason University. Retrieved March 23, 2023, from <https://climatecommunication.yale.edu/publications/climate-change-in-the-american-mind-april-2020/>
9. Grasso, M., & Zhang, Y. (2021). The Effects of Solution-Focused Climate Change News Frames on Readers Credibility and Behavioral Intentions. *Public Understanding of Science*, 30(3), 312-326.
10. Boykoff, M., & Fletcher, A. (2012). Animating Climate Change: How Cinema, TV, and Social Media Communicate the Science and Politics of Global warming. In A. Hansen, & R. Cox, *The Routledge Handbook of Environment and Communication* (pp. 334-347). Routledge.
11. Gerbner, G., & Gross, L. (1976). Living with Television: The Dynamics of the Cultivation Process. In J. Bryant, & D. R. Anderson (Eds.), *Communication and Persuasion: Central and Peripheral Routes to Attitude Change* (pp. 17-40). Lawrence Erlbaum Associates.
12. Starosielski, N. (2011). Movement that are Drawn: A History of Environmental Animation from The Lorax to FernGully to Avatar. *International Communication Gazette*, 73(1-2), 145-163.
13. Smith, H., & Kim, L. H. (2018). Environmental Messages in Animated Family Films. *Environmental Communication*.
14. Hansen, A., & Machin, L. (2016). Climate Change in Popular Culture: Representations and responses in Disney's Finding Nemo and Frozen. *Environmental Communication*, 10(5), 583-600.
15. Baumgartner, R., & Pieters, R. (2018). How animated films can boost environmental knowledge, attitudes, and behavior intentions. *Journal of Advertising Research*, 58(4), 444-455.
16. Cho, J., Lee, H., & Park, J. (2020). Eco-animation: the effects of environmental animation on environmental knowledge, attitudes, and behavioral intentions among college students. *Sustainability*, 11(3).