

Article

Human–Nature Relationships in East Asian Animated Films

Yuan Pan 

Department of Geography, University of Cambridge Conservation Research Institute, The David Attenborough Building, Pembroke, Cambridge CB2 3QZ, UK; yp273@cam.ac.uk

Received: 23 March 2020; Accepted: 11 April 2020; Published: 15 April 2020



Abstract: Our relationship with nature is complex and exploring this extends beyond academia. Animated films with powerful narratives can connect humans with nature in ways that science cannot. Narratives can be transformative and shape our opinions. Nevertheless, there is little research into non-Western films with strong conservation themes. Hayao Miyazaki is a Japanese filmmaker that is acknowledged as one of the greatest animated filmmakers and master storytellers globally. The themes of environmentalism, feminism and pacifism resonate throughout his films. His underlying message is that humans must strive to live in harmony with nature, whilst presenting us with the socio-cultural complexities of human–nature relationships. I review five of Miyazaki’s films that explore human–nature relationships. One film was released with a special recommendation from the World Wildlife Fund for Nature (WWF) and the other won an Oscar. I explore the lessons that we can learn from these films regarding human–nature relationships, and how to create powerful narratives that resonate with audiences and transcend cultural barriers.

Keywords: environmental films; conservation narratives; Hayao Miyazaki; human-nature relationships; Studio Ghibli

1. Introduction

“I believe that stories have an important role to play in the formation of human beings, that they can stimulate, amaze and inspire their listeners”.

Hayao Miyazaki

Our relationship with nature has always been complex. The term Anthropocene is now used to describe the current epoch, where humans are significantly degrading global ecosystems [1]. At the same time, we are reliant on nature for many irreplaceable benefits [2]. We also have a moral imperative to protect nature for future generations [3]. At this time when our relationship with nature is reaching a breaking point, never has it been more important to rethink human–nature relationships.

Exploring human–nature relationships extends beyond academic research. Film narratives can connect us with nature in a way that science cannot, engaging a wider range of audiences [4]. Powerful narratives can be transformative by bringing environmental issues to life [5]. Animated films such as *Wall-E* (2008) have highlighted environmental degradation and films such as Dr. Seuss’s *The Lorax* (2012) have tackled the issue of deforestation. Nevertheless, American animated films are only reflective of Western cultural values. Furthermore, they are still many steps behind the pioneer of East Asian animated films: Hayao Miyazaki (born 1941). John Lasseter, chief creative officer of Pixar and Walt Disney Studios, has long admired Miyazaki’s depiction of socio-cultural complexity and moral ambiguity in human–nature relationships. This kind of depiction remains rare in American animated films, where portrayals of nature can be simplified and romanticized [6].

Hayao Miyazaki is a Japanese animator and the co-founder of Studio Ghibli, an animation studio founded in 1985. Miyazaki is acknowledged as one of the greatest animated filmmakers and storytellers globally. He is a cultural icon with wide impacts in Japan, Korea and China. Although his films are reflective of East Asian values, they also have universal appeal and transcend across cultural and age barriers.

The themes of environmentalism, feminism and pacifism resonate throughout many of Miyazaki's films. He grew up in a time when Japan degraded nature for the sake of economic development, which impacted his views on environmental protection. Miyazaki's underlying message is that humans must live in harmony with nature for a sustainable future. We must retain a child-like sense of wonder and respect towards nature. The simple dichotomies of "humans against nature" or "good against evil" are unhelpful for reaching any meaningful resolution.

Previous research has investigated Hollywood animated films and their connections to environmental research [6,7]. Nevertheless, there is little research into non-Western animated films with environmental themes where cultural values can be different [8]. Netflix has recently acquired the rights to Studio Ghibli films, which will expose the films to new audiences. At a time when we are rethinking our relationship with nature and young people are becoming more concerned about the environment, we should look back and learn from Miyazaki's films.

In this paper, I analyze five of Miyazaki's films with strong environmental themes: *Nausicaä of the Valley of the Wind* (1984), *Laputa: Castle in the Sky* (1986), *My Neighbor Totoro* (1988), *Princess Mononoke* (1997) and *Spirited Away* (2001). *Nausicaä of the Valley of the Wind* was released with a special recommendation from the World Wildlife Fund for Nature (WWF) and *Spirited Away* won an Oscar for Best Animated Feature Film. The key questions I will explore are: 1) what do the films teach us about the complexity of human–nature relationships? 2) What can we learn about constructing powerful environmental narratives?

2. Methodology

As a conservation scientist, I analyze the five films through the lens of conservation science by grouping the films according to key themes. As indicated in Figure 1, I have conceptualized the important conservation-based themes in Miyazaki's films and how they connect to other issues such as capitalism, feminism, pacifism and cultural identities (Figure 1). This holistic way of thinking reflects the complexity of real-world conservation issues. In the results and discussion section, I analyze the films using six key themes: human–wildlife conflicts, gender and environmentalism, the post-apocalyptic world, human greed and overconsumption, nature and human wellbeing, and East-Asian animism.

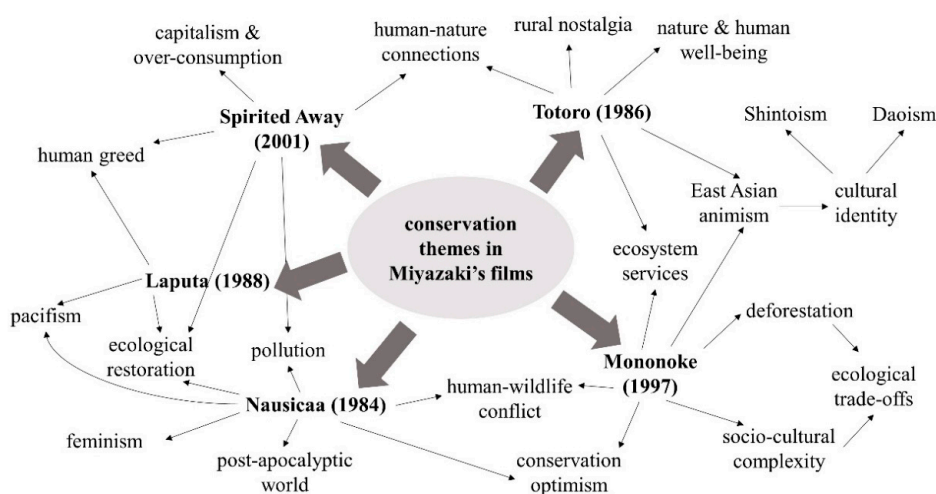


Figure 1. A summary diagram of conservation-oriented and other themes found in Hayao Miyazaki's animated films.

2.1. Definitions of Terminology

Animism is the potential for objects such as animals or rocks to be animated and possess spirits. Animistic religions can be found in many cultures around the world, and Shintoism is the oldest animist religion in Japan. Shintoism believes in Kamis (spirits or deities). Kamis are interconnected with nature, and they can be rivers, the wind or the sun.

Conservation optimism is a global optimism movement started by the Interdisciplinary Centre for Conservation Science at the University of Oxford for nature and people [9]. It was started due to the growing amount of pessimism and despair in conservation science. Conservation optimism shares and learns from inspiring stories where human and nature can coexist. It highlights the fact that we can change negative circumstances and celebrates the power of hope.

Deforestation is the cutting down or removal of forests to convert to non-forest uses, such as agricultural land, cattle ranches or urban developments. This leads to the loss of biodiversity (i.e., animal and plant species), soil erosion, and the release of carbon dioxide from trees into the atmosphere. Since the beginning of human civilization, an estimated 46% of trees have fallen around the world [10].

Ecological restoration is “the process of assisting the recovery of ecosystems that have been degraded or destroyed” [11]. Practitioners of ecological restoration provide conditions that are required for ecosystem recovery, such as the removal of invasive species. The aim is to establish a self-sustaining ecosystem, and this process can take decades or even hundreds of years to achieve.

Ecological trade-offs acknowledge that it is not possible to protect all parts of nature in many circumstances. As a result, trade-offs appear where an increase in one ecosystem service (i.e., benefit from nature) will result in the decrease of another service [12]. As an example, increasing timber provision from a forest by felling trees will result in soil erosion. Conflicts can also appear when different stakeholders hold different opinions.

Ecosystem services are the benefits that humans obtain from nature [13]. They are vital towards human well-being, including food and water provision, floor regulation and recreational benefits. Ecosystem services are context-dependent because different people will value services differently.

Human–wildlife conflict is one of the major threats to many animal species globally. As human populations increase, humans are now fighting with animals over space and food [14]. Examples include African elephants destroying crops or European wolves killing livestock. In extreme circumstances, humans have also been killed by animals. As a result, endangered animals are killed by humans in retaliation.

The connection between nature and human well-being is a rising topic of research currently. There is increased research showing that nature improves our mental and physical well-being [15]. By interacting with nature, humans can reduce their stress and anxiety levels.

2.2. Analyzed Films

2.2.1. Nausicaa of Valley of the Wind (1984)

A thousand years ago, an apocalyptic event named the Seven Days of Fire wreaked havoc on ecosystems. In the post-apocalyptic world, surviving humans must live in coexistence with the Toxic Jungle. The Toxic Jungle appeared after the Seven Days of Fire and is an uninhabitable place filled with poisonous fungal spores. Only gigantic arthropods named Ohmus can survive in the jungle. Nausicaa is a young princess living in the Valley of the Wind, who has empathy towards non-human creatures. She seeks to find out the truth about the Toxic Jungle and bring peace back to the land. This film has strong environmentalism and feminist themes, which resulted in a recommendation from WWF.

2.2.2. Laputa: Castle in the Sky (1986)

A young girl named Sheeta is kidnapped by Colonel Muska but their plane is ambushed by air pirates. Sheeta falls from the plane but the magic crystal she wears around her neck saves her.

She lands in a mining community where she meets an orphan boy named Pazu. Together they learn that the crystal comes from Laputa, an ancient and mystical civilization that lived atop a floating island in the sky. The protagonists decide to seek out Laputa and discover that Colonel Muska wants to use the power of Laputa for mass destruction. The protagonists decide to destroy Laputa rather than let it fall into the hands of evil.

2.2.3. My Neighbor Totoro (1988)

A pair of young sisters moves to a house in the countryside with their father, because their mother is recovering from sickness nearby. The young sisters explore their new house and the surrounding forest, discovering a large forest spirit named Totoro. They form a friendship with Totoro, who always appears to them at their times of need. This film focuses on the importance of human–nature connections for human well-being.

2.2.4. Princess Mononoke (1997)

In 14th century Japan, a young boy named Ashitaka is wounded and cursed by a demonized boar spirit. In search of a cure, he leaves his home and travels to the West. He meets Lady Eboshi who is the kind but stern leader of Iron Town, a haven for lepers and former prostitutes. Iron Town conflicts with San (a human girl raised by wolf spirits) and kamis (i.e., animal spirits) residing in the forest. This is because Lady Eboshi wants to destroy the forest to develop her iron mines, which will bring prosperity to her people. As humans and nature fight violently over resources, can a resolution ever be reached?

2.2.5. Spirited Away (2001)

A young girl named Chihiro and her parents wander into an abandoned amusement park. After her parents consume food present at the park, they are turned into pigs. Chihiro meets a mysterious young boy named Haku, who tells her that the park is a resort for spirits. She must work at the spirit bathhouse to find a way to save her parents. The bathhouse is run by an old witch named Yubaba, and Chihiro must survive to free both herself and her parents.

3. Results and Discussion

3.1. Human–Wildlife Conflict

In both *Nausicaä of the Valley of the Wind* (1984) and *Princess Mononoke* (1997), human–wildlife conflicts result in devastation and loss for both sides. A key source of conflict is between humans and ohmus in *Nausicaä of the Valley of the Wind*. Ohmus are gigantic arthropods living within the Toxic Jungle (Figure 2). They have a hive mind and normally have blue eyes. If humans kill any ohmus, they become enraged and their eyes become red. They swarm and destroy everything in their path. Ohmus help to spread fungal spores from the Toxic Jungle, extending the jungle's area. Humans fight for land against the Toxic Jungle and kill ohmus in the process. As a result, ohmus become enraged and kill humans. This becomes a vicious self-reinforcing cycle, reminding viewers of the devastating consequences of violence between humans and wildlife.

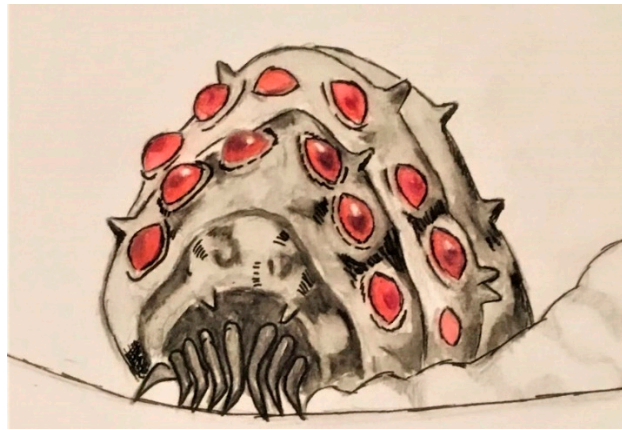


Figure 2. An Ohmu during their swarming behavior, as depicted in *Nausicaä of the Valley of the Wind* (1984).

Humans are terrified of ohmus and despise them. It is ironic when Nausicaä discovers that ohmus help to purify their polluted world. Another interesting point is that arthropods are presented as important characters, rather than charismatic vertebrates. Ohmus are shown as sentient beings contributing to ecosystem processes such as pollination. In conservation science, research into biodiversity declines generally concentrates on vertebrates. It is only recently that there has been a focus on global insect declines, highlighting that arthropods are vital for ecosystem processes [16]. By depicting ohmus as intelligent beings in the film, viewers develop empathy towards their fate even though their appearance is not traditionally cute.

Unlike Western animated films, Miyazaki presents a complex narrative in *Princess Mononoke* where there is no clear-cut villain. Defeating the so-called antagonist does not lead to a resolution of the human–wildlife conflict. Lady Eboshi is the antagonist because she seeks to destroy the forest for her iron mines. Nevertheless, she is not depicted as a clear-cut villain and the film is not simply an attack on the dangers of industrialization.

Lady Eboshi is the kind and successful leader of Iron Town and is greatly admired by its citizens. The citizens are former prostitutes and lepers (i.e., outcasts of society). Lady Eboshi offers a haven for outcasts and she strongly believes in gender equality. She does not destroy the forest out of greed for herself, but to build a better society for her people. Lady Eboshi does terrible things, but she is not inherently evil. This is highlighted by the lines uttered by a bandaged leper in Iron Town, who says,

“Life is suffering. It is hard. The world is cursed. But still, you find reasons to keep living”.

As a leper shunned by society, Iron Town is the only place that can offer him some dignity. Nevertheless, the only way for Iron Town to continue is to degrade the forest for its resources. Lady Eboshi is unafraid of consequences, even if she must kill the Forest Spirit for her people. As viewers, we are presented with a moral dilemma of the conflict between humans and nature.

In our society, economic development comes at a cost to nature and there are always trade-offs. As Western conservation scientists, it is easy to condemn developing countries for destroying pristine habitats. Many people in developing countries, however, live below the poverty line and for them, exploiting natural resources can be a key source of income [17]. How can we maintain the delicate balance between humans and nature? The film’s underlying messages present viewers with this question, but it does not simply condemn Lady Eboshi’s actions. She is a morally grey character that viewers cannot blame completely, just as many conservation issues are not black and white.

Although Lady Eboshi and her people will reap the short-term rewards of destroying the forest, the forest spirits and San will suffer the destruction of their homes. This can be compared to environmental justice issues in our society, where the poor and minority groups will suffer for the actions of the wealthy. For example, wealthy countries contribute the most to climate change but it is poorer countries

that will be most affected [18]. Miyazaki's films make viewers think deeply about difficult questions regarding our relationship with nature.

Ashitaka, the male protagonist, acts as the peacemaker between nature and humans. He belongs to an exiled ethnic community. As he is an outsider to the mainstream community, he remains unbiased to the two sides (i.e., nature versus humans). On multiple accounts, he asks why the forest and humans cannot co-exist. He understands that hate only breeds hate, and the cycle of revenge will never end. Yet to others, this seems like an infantile dream. Ashitaka sees a world where the forest spirits and humans can live in harmony, the idea of a complex social-ecological system [19]. By contrast, San and Lady Eboshi stand at the opposite ends of a spectrum. San has an ecocentric viewpoint (i.e., placing nature at the center) and Lady Eboshi has an anthropocentric viewpoint (i.e., placing humans at the center). They both see nature as a separate entity from humans, and reconciliation as impossible.

Even at the end of the film, we are not offered any clear resolution. San, the female protagonist raised by wolf spirits, cannot forgive humans for destroying the forest and killing her wolf mother. Although San and Ashitaka love one another, they cannot live together because San cannot reconcile with humanity. Humans and wildlife must form some sort of coexistence, and this is currently a global priority for conservation science. As population growth increases around the world, human–wildlife conflicts will only increase. Nevertheless, human–wildlife conflicts are complex because they are influenced by socio-political issues and by deep rooted human beliefs [14]. The film offers viewers moments of escape into a fantasy world, but it also forces us to face the complexities and realities of our own world.

3.2. Gender and Environmentalism

Many of Miyazaki's protagonists are women who defy feminine stereotypes and transcend gender barriers. These include San in *Princess Mononoke* (1997), Chihiro in *Spirited Away* (2001) and Nausicaä in *Nausicaä of the Valley of the Wind* (1984). For *Nausicaä of the Valley of the Wind*, the protagonist choice is more surprising, considering the film was produced in 1984, when feminism was not at the forefront of media representation. Miyazaki has said in an interview:

“Many of my films have strong female leads—brave, self-sufficient girls that don't think twice about fighting for what they believe in with all their heart. They will need a friend, or a supporter, but never a savior”.

Nausicaä is a princess and a pacifist in the Valley of the Wind, who frequently travels into the Toxic Jungle to study its wildlife. The Toxic Jungle is depicted as a mesmerizing but deadly ecosystem, filled with poisonous fungal spores. This bizarre but beautiful depiction sparks the viewer's curiosity regarding its origins. Nausicaä is not a typical princess as she has a critical mind. She has a desire to understand the true nature of the jungle, rather than basing her beliefs on the words of others. She conducts experiments to investigate the cause of fungal poison. This contrasts with other people, who only fear the Toxic Jungle. As viewers, we become emotionally invested into Nausicaä's journey to discover the jungle's true nature.

Through her experiments, Nausicaä discovers that fungal spores are not toxic if they are grown with unpolluted water. The water deep beneath the Toxic Jungle is pure. We learn that many years ago, humans created bioweapons that caused a large-scale nuclear disaster. This led to the appearance of the Toxic Jungle, which is nature's own method to detoxify and restore ecosystems.

Nausicaä is a messianic protagonist as she fulfills an ancient prophecy of the land:

“After one thousand years of darkness he will come, clad in blue and surrounded by fields of gold, to restore mankind's connection with the earth that was destroyed”.

The prophecy ironically refers to a male messiah, so Nausicaä reinforces the concept of transcending gender barriers. Nausicaä's love for non-human life reaches a pinnacle when she sacrifices her life to save a baby ohmu. She rises back from the dead and her clothes become stained blue by ohmu blood.

The golden tendrils of the ohmus lift her up, fulfilling the prophecy. Nausicaä's ability to move beyond the dichotomy of humans versus nature ultimately restores humanity's connection with nature. We see a small leaf growing at the end of the film, a symbol of life returning to the land.

3.3. Post-Apocalyptic World

In *Nausicaä of the Valley of the Wind* (1984), there are chilling parallels between Nausicaä's world and the world that we live in. The post-apocalyptic world is a direct result of human conflicts with nature. In the film, humans wear facemasks to avoid breathing in deadly fungal spores. In many areas of our world, people must wear facemasks due to air pollution. Air pollution is one of the biggest killers of our times [20], just as the fungal spores have poisoned Nausicaä's father and her people. As I edit this paper now, we are faced with one of the worst pandemics of our times and we are forced to wear masks against the virus. Although Miyazaki creates fantastical worlds, they are always grounded by issues that stem from our society.

In the film, many humans are shortsighted and oblivious to the truth. They do not understand that the jungle is restoring the environment. Therefore, humans view the jungle as evil and seek to destroy it by restoring the bioweapon that produced the post-apocalyptic world in the first place. This is reminiscent of our own society, where many people prioritize short-term economic growth over long-term environmental sustainability. By highlighting human ignorance, the film reminds us that being at war with nature ultimately ends in our own destruction.

3.4. Humans Greed and Over-Consumption

Miyazaki frequently portrayed human greed and over-consumption as the true villains. This is clearly illustrated by *Laputa: Castle in the Sky* (1986) and by *Spirited Away* (2001). Laputa is described as a once magnificent city with technology surpassing modern times; however, human greed resulted in its destruction. We see Laputa for the first time as clouds shrouding the floating city break apart and reveal an island-like castle (Figure 3). It has been hundreds of years since humans have set foot on Laputa, and the city is now void of human life. The only reminders of human technology are the ancient castle structures and giant humanoid robots that remain.



Figure 3. Laputa the floating city shrouded by clouds in the sky, as depicted in *Laputa: Castle in the Sky* (1986).

Nevertheless, the city is bursting with life without human influence. A gigantic tree has grown from within the city center, its canopy sprouting outwards to the top of the city and its roots extending to the bottom. The tree has become integrated into the city, linking the city and nature as one entity. As the protagonists explore, we see a vibrant ecosystem teeming with wildlife. The film highlights

the ephemeral nature of human technology and manufactured wealth, by contrasting the city void of human life with the thriving wildlife that has reclaimed the city.

One of the most memorable scenes is a gigantic robot holding out a tiny flower to the protagonists, in a greenhouse filled with thriving plants. Former humans built the robot as a weapon, but it has become a gardener and a protector of life. The film shows us that when robots are controlled by corrupt humans, they become a symbol of destruction. When robots are left to their own devices, they become a symbol of tranquility. Technology is not the real evil, but rather human greed, corruption and overconsumption.

At the end of the film, the protagonists destroy Laputa using a spell rather than let it fall into the hands of evil. It is symbolic that the giant tree remains unharmed and carries the city's remains higher into the sky. Laputa's control center and its weapons are destroyed, but the rest of the city flies higher to become an eternal entity. This resonates with one of the key lines:

"No matter how many weapons you have, no matter how great your technology might be, the world cannot live without love".

Laputa represents a pristine paradise in our hearts that guides our moral values, a place where nature and humans can coexist in harmony. We need nature to survive, but nature does not require us to survive. The film reminds us that a rapid industrializing civilization based on economic growth that is not grounded in sufficient moral progress will eventually collapse upon itself.

In *Spirited Away* (2001), human greed and over-consumption resulted in the loss of Haku's (the male protagonist) river and the Stink Spirit becoming severely polluted. At the beginning of the film, the female protagonist Chihiro's parents are turned into pigs because they over-consume food reserved for spirits. This alludes to the 1986–1991 Japanese bubble economy, where market prices became inflated, which was followed by a market crash in 1992. The metaphor of humans becoming pigs is a reminder that excessive greed can result in devastating consequences.

A key character used to symbolize over-consumption is No-face, representing the consumer culture in a capitalist society. He is a lonely spirit in black robes that wears an expressionless white mask, who becomes interested in the female protagonist Chihiro. As No-face hides behind his mask, he has no real identity. This suggests that he does not know his true self or what he really wants. He first attempts to use bath tokens to win over Chihiro's affection and later magically produces gold to win over the bathhouse workers. After swallowing a greedy frog spirit, No-face becomes corrupt himself. This greed manifests as an insatiable hunger, leading No-face to become a monster that swallows other bathhouse workers. Nevertheless, Chihiro is not tempted by No-face's gold and she force-feeds him magical medicine. This leads to No-face regurgitating everything he has consumed and becoming calmer in nature. Miyazaki shows viewers that over-consumption does not bring us the happiness that we crave and can instead bring about destruction. Excessive materialistic wealth has an ephemeral nature that ultimately results in the loss our true identities.

3.5. Nature and Human Well-Being

In *My Neighbor Totoro* (1988), Miyazaki portrays an idyllic image of the countryside: the never-ending greenery, the flowing streams, the buzzing cicadas and the countryside house overgrown by vegetation. The plot is simplistic with no sources of real conflict because it was targeted at younger viewers, hoping to reconnect them with nature. The film also created a deep sense of nostalgia that resonated amongst older viewers who had lost their connections with nature due to urbanization. Totoro remains one of Miyazaki's most loved films for children and adults alike, because it invokes a simplistic happiness.

Throughout the film, we are shown how young children form connections with nature through unstructured playtime. The two sisters are given freedom to explore their new surroundings, and their father rarely supervises them. In one scene, a four-year-old Mei attempts to catch a small Totoro (a forest spirit) that she has discovered in the garden. She is on her hands and knees, looking intently

at the acorns that the small Totoro has dropped onto the ground. These unstructured playtimes help Mei become fascinated by nature, evoking a sense of awe within children's minds.

The sisters' father takes them to the nearby forest to pay respect to an enormous camphor tree, where a large Totoro resides. The camphor tree is native to China and Japan, growing to 30–50 m in height and living for hundreds of years. In Japan, people touch the bark of old trees and pray for longevity in their lives. Some believe that spirits reside in ancient trees, and destroying a tree can result in a curse [21]. Their father's action helps the sisters develop respect towards nature. Children are not born with an innate connection to nature; it is formed through their childhood experiences.

Although the film is targeted at younger viewers, it deals with a serious emotional issue. How do children cope mentally when a parent develops a serious illness? At the start, we learn that the two sisters are moving to the countryside because their mother is recovering in a nearby hospital. A mother is a critical nurturing figure, and her absence can cause anxiety in children. In some ways, Totoro acts as the motherly figure in the film. Totoro is a gigantic and furry forest spirit, resembling a mixture of a cat, an owl and the Japanese raccoon dog (Figure 4). Totoro is deliberately depicted as a warm and fuzzy entity, always appearing to the sisters at their times of need. As adult viewers, we wonder whether Totoro is a figment of the girls' imagination, made up to deal with the stress of moving to a new house and their sick mother. Regardless of whether Totoro is real or not, however, we are shown the healing effects of nature both physically and mentally.



Figure 4. Totoro, a giant forest spirit, with Mei and smaller Totoros lying on top of him, as depicted in *My Neighbor Totoro* (1988).

Humans co-exist with nature in the film, showing agricultural landscapes alongside undisturbed forests. This depicts traditional Satoyama landscapes in Japan, where agricultural landscapes, semi-natural and natural ecosystems exist side by side in a mosaic landscape [22]. Satoyama landscapes support multiple ecosystem services (i.e., benefits that humans obtain from nature), but they are disappearing in modern times due to intensive agriculture. Miyazaki evokes a deep sense of nostalgia in older audiences by reminding them of what has been lost in modern society.

3.6. Animism in Japanese Culture

In Japan, many believe that spirits known as *Kamis* reside in forests. *Kami* stems from Shintoism, one of the oldest and animistic religions in Japan [23]. At the core of Shintoism is the emphasis on human–nature connections. Miyazaki uses the traditional concept of *kami* and creates fantastical worlds in *Princess Mononoke* (1997) and in *Spirited Away* (2001).

In *Princess Mononoke* (1997), humans and Kamis fight over forest resources. The most powerful kami is the Forest Spirit (i.e., the Shishigami), who is neither good nor evil but a personification of the forest (Figure 5). In the daytime, the Forest Spirit presents as a deer with a human face. At nighttime, it transforms into a giant and translucent humanoid (i.e., the Night Walker). The Night Walker is eerie and unnerving to look at, almost resembling a monstrosity.



Figure 5. The Forest Spirit (Shishigami) and the Night Walker, which the forest spirit transforms into at night, as depicted in *Princess Mononoke* (1997).

The transformation of the Forest Spirit into the Night Walker represents the duality of nature as a bringer of both life and death. This is illustrated when flowers bloom as the Forest Spirit walks into the forest but flowers wilt as the Forest Spirit moves away. Nature can bring life, but it can also bring death. Nature provides humans with benefits (i.e., ecosystem services), but nature does not deliberately provide these benefits for humans. If humans degrade nature, nature can also bring destruction such as extreme weather events. Just like the Forest Spirit, nature can both benefit and harm humans.

When humans cut off the Forest Spirit's head, a black ooze emerges from its body as it goes on a rampage to be reunited with its head. The black ooze kills everything it touches in the forest and wreaks devastation, representing a tipping point for nature. At the end of the film, the Forest Spirit is reunited with its head and it restores the forest's health. This also heals the protagonist's wounds, as well as the lepers in Iron Town. Despite the devastation that humans have wreaked on the forest, the Forest Spirit heals the humans.

The forest is also inhabited by other animal spirits, such as the wolf spirits who raised San (the female protagonist), the boar and the ape spirits. Some forest spirits are depicted as bloodthirsty, violent or superstitious. The boar spirits are the proudest and would rather die than share forest resources with humans. They were the first to violently fight against humans. The ape spirits are superstitious and wanted to eat Ashitaka when he first visited the forest, so that they could become as powerful as the humans. The film does not naively depict all forest spirits as good and all humans as bad. This provides moral ambiguity to the central conflict between humans and the forest spirits.

The last type of forest spirits is Kodamas (i.e., tree spirits). In Japanese folklore, Kodamas reside within trees and are responsible for echoing sounds in forests. Kodamas are depicted as small and childlike spirits with large heads, making a rattling sound as they shake their heads. When Lady Eboshi (the antagonist) cuts off the Forest Spirit's head, Kodamas start falling off trees like dead leaves and die. They are indicators for the forest's health. At the end of the film, however, viewers see a Kodama reappearing in the forest. Although the forest has been damaged and many forest spirits are dead, the single Kodama symbolizes the return of life and hope to the forest.

Nature is not depicted as a soft-natured entity in the film. When humans do not respect nature, it seeks revenge upon humans. At the beginning, we see the demonized boar spirit infected by hatred because he was shot by a bullet. The depiction of his bloodshot eyes and the black maggots oozing from his body is a horrific image. Whether it is the demonized boar spirit killing humans, or the wolf spirit biting off Lady Eboshi's (the antagonist) arm, the film boldly displays a bloodthirsty side of nature. Miyazaki has emphasized multiple times that we must retain respect for nature or suffer consequences. This is tied to Eastern philosophies, such as Shintoism and Daoism, which state that if we do not respect nature then nature will ultimately fight back against us.

In *Spirited Away* (2001), the female protagonist Chihiro is trapped in the world of Kamis. Both animism and identity are important themes in the film. Haku, the male protagonist, cannot return home because he has forgotten his name. Viewers learn that Haku is a river spirit that can take the form of a white dragon (Figure 6). His river was destroyed to build apartment complexes, so he has no home. Haku's character is inspired by the Japanese dragon, a serpent-like creature that has power over water bodies. When we see Haku's true form as a white dragon, majestic and flowing like a river, we are left in awe. This reminds us that humans have destroyed an entire ecosystem for a short-term benefit, and we have forgotten what is truly valuable.



Figure 6. Haku, a young river spirit, and the ancient river spirit that was first mistaken as a Stink Spirit, as depicted in *Spirited Away* (2001).

The owner of the spirit bathhouse, Yubaba, controls her workers by making them forget their real names. Yubaba represents capitalism, as she is obsessed with gold and making profits. Chihiro, the female protagonist, helps Haku break free of Yubaba's enchantment by remembering their first meeting and his real name. When Chihiro remembers Haku as the spirit of the Kohaku River, he changes back into human form. The film highlights that human connections to nature are important, and many of us have forgotten about or lost this connection to nature.

The Stink Spirit is the other character that highlights the environmental theme. When the Stink Spirit first attempts to enter the spirit bathhouse, other workers turn him away due to his foul odor. He is depicted as an oozing pile of brown sludge. After Chihiro bathes him in copious amounts of herbal solution, it is revealed that the Stink Spirit is an ancient river spirit that has been severely polluted.

We see rubbish, car tires and even a bicycle being pulled out from within the spirit. The Stink Spirit's true form is revealed as a dragon that flies away, leaving Chihiro with a magical medicine as a token of gratitude. Miyazaki has said that his inspiration for the Stink Spirit is from his own experience of cleaning rubbish from a local polluted river, where he found a bicycle stuck in the riverbed. Miyazaki believes in the power of community actions and collectivism. In the film, the entire spirit bathhouse helps Chihiro with removing rubbish from the Stink Spirit. The combined power of the community restores the Stink Spirit to its true self as a river spirit.

4. Conclusions

Hayao Miyazaki is a man ahead of his own times, and the conservation themes within his films have stood the test of time. Miyazaki weaves conservation issues into films without preaching to viewers, by creating fantastical worlds echoing the problems of our own world. His narratives are simple but powerful, leaving viewers to contemplate important questions. He teaches us to create narratives that resonate with audiences emotionally. We must embrace multiple viewpoints and values. These lessons should be applied to the way that we communicate conservation issues to reach wider audiences.

Furthermore, animated films can significantly influence younger generations. Improved conservation and environmental protection depend on the actions of future generations, and this is influenced by whether they care about nature. How do we inspire younger people more? In an age dominated by films and television series, one way may be through animated films [6]. Previous research has indicated that films can shift public opinions, but it may be difficult to portray conservation issues and retain popular appeal [24]. Miyazaki's films show us that it is possible to portray accurate and complex conservation issues in animated films but still retain mainstream appeal.

We do not always make decisions based on rational choice, and many decisions are based on personal emotions. We know that films can evoke powerful emotions and can also shape our opinions on many issues [25]. It is important to learn from Miyazaki's films to frame conservation narratives more effectively to reach wider audiences.

A final lesson that we can learn is regarding optimism. Miyazaki is a self-contradictory person to the point that he doubts whether his films have had any impact on anyone. Yet his films often end with seeds of hope for the future. As conservation scientists, we are faced with constant pessimism. Nevertheless, optimism is important to envision a better future [26]. Miyazaki teaches us that it is possible to be pessimistic and to remain optimistic at the same time.

In conclusion, I hope this paper has encouraged you to take some time out of your busy schedule and lose yourself in Miyazaki's films. I hope you recommend these films to your colleagues, your friends and your children. Strive for peace between humans and nature with *Nausicaa*; dream about the floating island of Laputa; become a child again and wander through the forests with *Totoro*; ponder the moral dilemma between humans and the forest in *Princess Mononoke*; and remember to never lose sight of what is important in *Spirited Away*.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Seddon, N.; Mace, G.M.; Naeem, S.; Tobias, J.A.; Pigot, A.L.; Cavanagh, R.; Mouillot, D.; Vause, J.; Walpole, M. Biodiversity in the Anthropocene: Prospects and policy. *Proc. R. Soc. B Biol. Sci.* **2016**, *283*, 20162094. [[CrossRef](#)]
2. Costanza, R.; de Groot, R.; Braat, L.; Kubiszewski, I.; Fioramonti, L.; Sutton, P.; Farber, S.; Grasso, M. Twenty years of ecosystem services: How far have we come and how far do we still need to go? *Ecosyst. Serv.* **2017**, *28*, 1–16. [[CrossRef](#)]
3. Batavia, C.; Nelson, M.P. For goodness sake! What is intrinsic value and why should we care? *Biol. Conserv.* **2017**, *209*, 366–376. [[CrossRef](#)]

4. Dahlstrom, M.F. Using narratives and storytelling to communicate science with nonexpert audiences. *Proc. Natl. Acad. Sci. USA* **2014**, *111*, 13614–13620. [[CrossRef](#)]
5. Leslie, H.M.; Goldman, E.; Mcleod, K.L.; Sievanen, L.; Balasubramanian, H.; Cudney-Bueno, R.; Feuerstein, A.; Knowlton, N.; Lee, K.; Pollnac, R.; et al. How good science and stories can go hand-in-hand. *Conserv. Biol.* **2013**, *27*, 1126–1129. [[CrossRef](#)]
6. Silk, M.J.; Crowley, S.L.; Woodhead, A.J.; Nuno, A. Considering connections between Hollywood and biodiversity conservation. *Conserv. Biol.* **2018**, *32*, 597–606. [[CrossRef](#)]
7. Verissimo, D.; Anderson, S.; Tlusty, M. Did the movie Finding Dory increase demand for blue tang fish? *Ambio* **2020**, *49*, 903–911. [[CrossRef](#)]
8. Smith, M.J.; Parsons, E. Animating child activism: Environmentalism and class politics in Ghibli’s Princess Mononoke (1997) and Fox’s Fern Gully (1992). *Continuum* **2012**, *26*, 25–37. [[CrossRef](#)]
9. Conservation Optimism Conservation Optimism. Available online: <https://conservationoptimism.org/> (accessed on 8 April 2020).
10. Crowther, T.W.; Glick, H.B.; Covey, K.R.; Bettigole, C.; Maynard, D.S.; Thomas, S.M.; Smith, J.R.; Hintler, G.; Duguid, M.C.; Amatulli, G.; et al. Mapping tree density at a global scale. *Nature* **2015**, *525*, 201–205. [[CrossRef](#)]
11. Society for Ecological Restoration Restoration Resource Center What is Ecological Restoration? Available online: <https://www.ser-rrc.org/what-is-ecological-restoration/> (accessed on 8 April 2020).
12. King, E.; Cavender-Bares, J.; Balvanera, P.; Mwampamba, T.H.; Polasky, S. Trade-offs in ecosystem services and varying stakeholder preferences: Evaluating conflicts, obstacles, and opportunities. *Ecol. Soc.* **2015**, *20*, 5. [[CrossRef](#)]
13. Abson, D.J.; von Wehrden, H.; Baumgärtner, S.; Fischer, J.; Hanspach, J.; Härdtle, W.; Heinrichs, H.; Klein, A.M.; Lang, D.J.; Martens, P.; et al. Ecosystem services as a boundary object for sustainability. *Ecol. Econ.* **2014**, *103*, 29–37. [[CrossRef](#)]
14. Dickman, A.J. Complexities of conflict: The importance of considering social factors for effectively resolving human-wildlife conflict. *Anim. Conserv.* **2010**, *13*, 458–466. [[CrossRef](#)]
15. Sandifer, P.A.; Sutton-Grier, A.E.; Ward, B.P. Exploring connections among nature, biodiversity, ecosystem services, and human health and well-being: Opportunities to enhance health and biodiversity conservation. *Ecosyst. Serv.* **2015**, *12*, 1–15. [[CrossRef](#)]
16. Seibold, S.; Gossner, M.M.; Simons, N.K.; Blüthgen, N.; Müller, J.; Ambarlı, D.; Ammer, C.; Bauhus, J.; Fischer, M.; Habel, J.C.; et al. Arthropod decline in grasslands and forests is associated with landscape-level drivers. *Nature* **2019**, *574*, 671–674. [[CrossRef](#)]
17. Brockington, D.; Igoe, J.; Schmidt-Soltau, K. Conservation, human rights, and poverty reduction. *Conserv. Biol.* **2006**, *20*, 250–252. [[CrossRef](#)]
18. Mendelsohn, R.; Dinar, A.; Williams, L. The distributional impact of climate change on rich and poor countries. *Environ. Dev. Econ.* **2006**, *11*, 159–178. [[CrossRef](#)]
19. Ostrom, E. A General Framework for Analyzing Sustainability of Social-Ecological Systems. *Science* **2009**, *325*, 419–422. [[CrossRef](#)]
20. Landrigan, P.J. Air pollution and health. *Lancet Public Health* **2017**, *2*, e4–e5. [[CrossRef](#)]
21. Omura, H. Trees, Forests and Religion in Japan. *Mt. Res. Dev.* **2004**, *24*, 179–182. [[CrossRef](#)]
22. Jiao, Y.; Ding, Y.; Zha, Z.; Okuro, T. Crises of biodiversity and ecosystem services in Satoyama landscape of Japan: A review on the role of management. *Sustainability* **2019**, *11*, 454. [[CrossRef](#)]
23. Lee, Y.-S.; Sakuno, S.; Prebensen, N.; Kimura, K. Tracing Shintoism in Japanese nature-based domestic tourism experiences. *Cogent Soc. Sci.* **2018**, *4*, 1446671. [[CrossRef](#)]
24. Balmford, A. Hollywood, Climate Change, and the Public. *Science* **2004**, *305*, 1713. [[CrossRef](#)]
25. Pautz, M.C. Argo and Zero Dark Thirty: Film, government, and audiences. *PS Political Sci. Politics* **2014**, *48*, 120–128. [[CrossRef](#)]
26. Beever, E. Society for Conservation Biology Diversity: The Roles of Optimism in Conservation Biology. *Conserv. Biol.* **2000**, *14*, 907–909. [[CrossRef](#)]

