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THE MATERIAL IMPACT OF FILM-NARRATIVES: *THE ABBYS, AQUAMAN* AND *PONYO* UNDER AN ECOCINEMA LENS[1]

EL IMPACTO MATERIAL DE LA NARRACIÓN CINEMATOGRÁFICA: *THE ABBYS, AQUAMAN* Y *PONYO* DESDE EL ECOCINE

L'IMPACT MATERIEL DE LA NARRATION CINEMATOGRAPHIQUE : *THE ABBYS, AQUAMAN* ET *PONYO* A PARTIR DE L'ECOCINEMA

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Abstract: Beyond environmental representation, ecocinema has brought a focus on production and distribution practices to film studies, and this article aims to interweave these material and narrative elements. *The Abyss* (James Cameron, 20th Century Fox, 1989), *Ponyo* (Hayao Miyazaki, Studio Ghibli, 2009) and *Aquaman* (James Wan, DC & Warner Bros, 2018) share a powerful-magical-ambiguous villain who creates a tidal

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wave to take vengeance against humanity for its pollution and wars. Even though the movies are conceived as environmentalist or pacifist, it is the antagonist who defends these messages, whereas the protagonist fights against them. Drawing on this apparent narrative inconsistency, we apply an *ecocinema* theoretical framework that looks at the interdependence of material reality and narrative to ascertain how they crossover. We frame these films as being part of a global industrial and capitalist market and, as such, demonstrate how they reproduce intensive labour and resource exploitation in both material production and narrative representation.

Keywords: Ecocinema; James Cameron; Studio Ghibli; *Aquaman*; Ecocriticism; Ecomedia; Film environmental impact; Popular cinema.

Resumen: Más allá de la representación de la naturaleza, el ecocine ha puesto en primer plano los medios de producción y distribución en los estudios cinematográficos. Este artículo pretende ligar ambos, la parte material y la narrativa. *The Abyss* (James Cameron, 20th Century Fox, 1989), *Ponyo* (Hayao Miyazaki, Studio Ghibli, 2009), y *Aquaman* (James Wan, DC & Warner Bros, 2018) tienen en común un villano mágico que se venga de la polución humana a través de un tsunami. Aunque las películas son concebidas como pacifistas o ambientales, estos mensajes son defendidos por el antagonista y el protagonista parece luchar contra ellos. Partiendo de esta inconsistencia narrativa, se aplica el marco del ecocine para comprender la interdependencia entre la realidad material y la narrativa. Se propone que estas películas son parte de una industria global, dentro de un capitalismo de mercado, y como tal, reproducen la explotación laboral y de recursos, tanto en el mundo material como en los discursos de la representación.

Palabras clave: ecocine; James Cameron; Studio Ghibli; *Aquaman*; ecocrítica; ecomedia; impacto ambiental del cine; cine popular.

Résumé : Au-delà de la représentation de la nature, l'écocinéma a mis en avant les pratiques de production et de distribution dans les études cinématographiques. Cet article vise à lier à la fois l'aspect matériel et narratif. *The Abyss* (James Cameron, 20th Century Fox, 1989), *Ponyo* (Hayao Miyazaki, Studio Ghibli, 2009) et *Aquaman* (James Wan, DC & Warner Bros, 2018) ont en commun « méchant » aux pouvoirs magiques qui se venge de la pollution humaine et des guerres par un tsunami. Bien que les films soient conçus comme pacifistes ou écologistes, ces messages sont défendus par l›antagoniste, et le protagoniste semble s›y opposer. En nous appuyant sur cette apparente

incohérence narrative, nous appliquons un cadre théorique d'écocinéma qui examine l'interdépendance entre la réalité matérielle et la narration afin de voir comment elles sont liées. Nous suggérons que ces films s'inscrivent dans un marché capitaliste et industriel mondial et, en tant que tels, ils reproduisent l'exploitation intensive de la main-d'œuvre et des ressources, tant dans la réalité matérielle que dans la représentation narrative.

Mots-clés : *écocinéma* ; James Cameron ; Studio Ghibli ; *Aquaman* ; Écocritique ; Écomédias ; Impact environnemental du cinéma ; Cinéma populaire.

1. Introduction

Film studies has traditionally focused on representation, relegating production and distribution to curiosities, e.g. Did you know *The Abyss* was filmed in an abandoned power plant? Did you know *Aquaman*'s actors' underwater hair was created through CGI? Did you know *Ponyo* was fully hand-drawn? In this sense, the ideas these three films portray on-screen have been widely discussed in academia, leaving production aside. More recently, ecocinema has proposed the seventh art is not just about image and sound, but also the resources required to create them, thus foregrounding what were previously mere curiosities. This article takes a comparative ecocinema approach looking at film and the relationship "between cinema and other media, between cinema and other extractive technologies, between cinema and the natural world" (Solomon 7). The analysis aims to critically reflect on film with a view to reclaiming the entanglement between art and materiality, taking the latter to mean production and distribution practices, and regarding cinema as part of a global industrial and capitalist system.

The article will look at three different aspects in three films to propose pathways linking the cinematic and material worlds. The selection of *The Abyss* (James Cameron, 20th Century Fox, 1989), *Ponyo* (Hayao Miyazaki, Studio Ghibli, 2009) and *Aquaman* (James Wan, DC and Warner Bros, 2018) is based on all three movies sharing a villain character with a pacifist or environmentalist message who, angered by humanity's pollution and wars, creates a tsunami to take vengeance against humankind. The plots in the films are concerned with humanity's impact on the planet, so it would seem legitimate to look into how their narratives and production practices might relate to this theme. The comparison is therefore made on the basis of plot similarity.

Ecocinema is the broad analytical framework for this article, sharing contemporary perspectives that see how "it [ecocinema] makes a fundamental point about

the ontology of the moving image: that no image is complete in and of itself, autonomous from the rest of the world, either as pure art or pure commodity" (Rust et al. 6). It aligns with Vaughan or Bozak in the sense that "cinema is intricately woven into industrial culture and the energy economy that sustains it" (Bozak 1). As Vaughan states, Hollywood films such as *The Abyss* or *Aquaman* are a "scapegoat" when tackling cinema's impact due to their resource-intensive productions, and we cannot overlook how this comes from the Western "detachment from the material and ethical impacts of virtual experience" (6). This article draws on Stine's thesis that "there is no carbon neutral production" when considering the film industry as a whole. Moreover, it considers film production to be unsustainable where it is based on industrial systems that fail to promote responsible labour practices, as will be explained through the three selected films.

The article intends to not only outline cinema's material impact, but also link it to the narratives and discourses of films themselves. To do so, it partly uses Hye Jean Chung's "media heterotopia" theory to look for "spectres" in the final film in order to trace them back to production practices. Chung sees the "spectre" in light of Derrida's *spectral vision* "that perceives and identifies ghostly presences of productive labor", arguing that "[t]he materiality of labor […] always leaves an onscreen residue that is perceived by those who attain this spectral vision and those who are willing to see" (Chung 28). Chung particularly looks at the labour behind every movie, whereas here the environmental aspect is also spotlighted.

The analysis explains how the shared environmental or peace narratives in *The Abyss*, *Aquaman* and *Ponyo* are front and centre at the beginning, yet become diluted by the end of each film. It attempts to explore whether these *narrative inconsistencies* are environmental *spectres* and can be interwoven with material production and distribution. With regard to *The Abyss*, it analyses how the resource intensive filming techniques generated an empty ocean, home to godlike aliens that absolve the protagonists and the production team from any responsibility. Turning to *Aquaman*, it explores the depoliticised use of spectacular worldbuilding through CGI and studio filming, and how this resonates with the villain's bleak environmental discourse. Finally, the analysis draws from a media-mix and plastic pollution study (Tvorun-Dunn and Pascaru) to analyse *Ponyo*, looking at Studio Ghibli's non-environmental practices—despite being a company acclaimed for its environmental messages—and how these are reflected in the film.

In turn, the study uses the different tsunami scenes and the villains depiction as the *spectre* for its analysis of all three films. The antagonists in each embody environ-

mental or pacifist lines, and the positioning of these discourses on the *wrong side* creates tension, meaning the main protagonist must fight against peace and sustainability. Additionally, the villains can control and inhabit the oceans, experiencing and feeling the damage humans do to them. Tsunamis are transformed either into a self-defence vengeance mechanism (*Aquaman* and *Ponyo*) or a punishment for the harm caused (*The Abyss*). We firstly look at how the films use the tsunami trope for environmental or pacifist purposes, and how this narrative approach is inconsistent with the rest of the film. We then move on to production practices that also counter the films' message. Lastly, the analysis draws discursive links between production practices and the filmic narratives. However, before delving into the films, the recurring tsunami motif in all three movies will be framed.

2. Don't Make a Wave

Tsunamis are the symbolic element in *The Abyss*, *Ponyo* and *Aquaman* used to represent how ocean creatures avenge the damage caused by humans. In the real world, tsunamis are caused by great displacements of water, normally linked to earthquakes and crustal slides (Hamblyn 58). Tsunamis have also been caused by volcanic eruptions, landslides or rockfalls. In addition, the nuclear tests in the Pacific Ocean, which will be discussed below, led to a tsunami (Hamblyn 54). Tsunamis originate in the "disturbance of an entire water column". This "disturbance" moves through the ocean at great speed and takes on its recognisable form when it reaches shallow waters, where waves slow down, pile up and generate a single huge wave (Hamblyn 51).

Originally, the Japanese term *tsunami* meant "harbour wave" and can be dated back to 1611 (Hamblyn 61). Its common-day meaning and usage increased during the twentieth century, although only became widespread after the 1946 Aleutian Islands earthquake leading to the fatal tsunami in Hilo, Hawai'i (Hamblyn 63). As Hamblyn notes, its filmic representation can be traced back to *Deluge* (Felix E. Feist, 1933), where New York is destroyed by a tidal wave. In the 1970s, wave-disaster films gained popularity in the US with the release of *Krakatoa. East of Java* (Bernard L. Kowalski, 1969), *The Poseidon Adventure* (Ronald Neame, 1972) or *The Last Wave* (Peter Weir, 1977). Since this time, a large number of wave-disaster movies have been released, with one of the most recent and popular additions being *The Impossible* (Juan Antonio Bayona, 2012). All these productions depict human survival during or in the aftermath of a natural cataclysm.

The tsunamis in *The Abyss*, *Aquaman and Ponyo* are generated in vengeance for human pollution and wars. Whereas the waves are an attack requiring the protagonists' response in *The Abyss* and *Aquaman*, the tsunami in *Ponyo* is part of the villain's scheme to bring balance back to the Earth by creating a flood that is not portrayed as a disaster. Indeed, as Miyazaki states, it is a "given of this world" (Sotinel), a view likely linked to the fact that Japan experiences the most tsunamis in the world. Early filmic examples of powerful beings threatening Earth as a consequence of human action include *The Day the Earth Stood Still* (Robert Wise, 1951) and, even more impactful and ocean-based, *Godzilla* (Ishiro Honda, 1954). In a similar vein as in *The Abyss*, the powerful villains in these two films condemn humanity for the impacts of its wars and, more specifically, its use of nuclear weapons.

The antagonists in *Aquaman* and *Ponyo* create tsunamis as a response to environmental damage. As Cordle has put it, nuclear literature has a global "'politics of vulnerability', […] an acute sense of human fragility in the face of technological modernity" (148). The world's "vulnerability" due to humankind's potential for destruction on a shared planet —and the urgent need to put a stop to it— ties the pacifist message of *The Abyss* to the environmental perspective of *Aquaman* and *Ponyo*. This sense of a global vulnerability is what links all three villains: they all experience the world's fragility, especially with regard to the oceans, and thus act accordingly.

Indeed, Greenpeace originated as the *Don't Make a Wave Committee* organisation, formed in protest against the Amchitka nuclear tests in the North Pacific. Its name refers to the tsunamic risk from nuclear tests, reminding the 1946 Aleutian Islands earthquake, and their impact on local wildlife (Kinney 303). Thus, *Don't Make a Wave* envisaged tsunamis as 1) an expression of humankind and nature's vulnerability to disaster, 2) a reflection of humanity's capacity to destroy, and 3) as a symbol of an environment unable to withstand further pollution and wars. Tsunamis play a similar role in the films under analysis here, depicting humanity's vulnerability to tsunamis generated by villains who mirror its ability to destroy. Difference is that the waves depicted here are caused by the nature defenders and not by polluters. They serve as punishment or vengeance for polluted oceans. This theme is part of the overall narrative arc in *Aquaman* and *Ponyo*, but condensed into the last twenty minutes of *The Abyss*.

3. Anti-Nuclear *The Abyss* (Cameron, 1989) in a Nuclear Plant

The Abyss is a 1989 film written and directed by James Cameron, starring Ed Harris, Mary Elizabeth Mastrantonio and Michael Biehn. *The Abyss* tells the story of Bud (Ed Harris), the captain of a fictitious underwater drilling platform who is contracted

to inspect a navy submarine wreck, perched next to a trench. The story represents the dispute between the navy and the platform workers when they found out there are NTIs (non-terrestrial intelligence) in the deep. Given the Cold War context, the navy argues that the creatures could be Russian and subsequently drops the warhead into the trench. After a dispute, Bud decides to head down into the trench in order to deactivate the bomb. During the dive, he realises he will not be able to make it back and confesses his love for Lindsay (Mary Elizabeth Mastrantonio), the platform engineer. Bud manages to dismantle the bomb and, with near to no oxygen left, is suddenly guided by an NTI into their ship in the abyss. There, they show Bud how they have managed to intercept human communications. The news shows a great wave about to hit all coasts. Bud discovers the NTIs are responsible for the pending disaster and convinces them to stop it, as will be explained below. In the end, both the protagonist and humanity are saved and the NTI ship surfaces to make first contact with humankind.

The Abyss is the fourth film directed by James Cameron. His previous work, including *The Terminator* and *Aliens*, had already established him as a successful blockbuster director. Science fiction and the nuclear theme were already present in *The Terminator* as a post-apocalyptic world, and in *Aliens* as an extraterrestrial nuclear power plant. Both films incorporated a combination of computer graphics and practical effects. With *The Abyss,* Cameron further explored the possibilities of CGI. Film historians praise the film for its technical advances, providing a "glimpse into what the future held for computer-generated images on film" (Holt 214). While it did not achieve a high level of commercial success, *The Abyss* is widely regarded as a significant landmark in Hollywood film production.

As mentioned earlier, the article focuses on the tsunami and how the NTIs are portrayed. Although the wave sequence was part of the script and actually filmed, it was not included in the original 1989 cinema release due to production constraints. It was added later to a second theatrical and DVD release in 1992. James Cameron stated he preferred this version because, "I like the idea that we are judged and found wanting by rational, godlike aliens, but then saved by one good man. As a mob, we're a lost cause. As individuals, there is hope" (Keegan 74). Thus, the depiction of the NTIs as godlike creatures and the tsunami itself are closely intertwined.

Figure 1. (From left to right and top to bottom) Lindsay finding an NTI, the anthropomorphic NTI, the water screen and the tsunami (*The Abyss*).

The relationship between oceans and outer space is widespread, ranging from cultural products to legal frameworks. One of the best-known facts about the ocean depths is how much less we know about them than we know about the Moon's surface. The perception of oceans as an alien space is not new. As Stefan Helmreich puts it in *Alien Ocean:*

> The figure of the alien materializes, I contend, when uncertainty overtakes scientific confidence about how to fit newly described life forms into existing classifications or taxonomies, when the significance of these life forms for forms of life […] difficult to determine or predict. […] [W]e find the alien to be a revelatory, funhouse reflection of particular selves. James Cameron's 1988 [sic] science fiction film *The Abyss* offers an ideal-typic illustration. […] The oceanic other's uncanny ability in *The Abyss* to sculpt water into technologies of useful energy as well as of careless destruction mirrors humanity's own fateful facility with atomic power (16).

In *The Abyss*, the NTIs are the only living creatures that inhabit the ocean depths, apart from a few blurry flower-like beings shown in the background. It could be argued that the ocean floor had not yet been filmed or photographed, but extant documents of the deep sea already existed at the time. For example, in *Conshelf Adventure* (1966), a documentary from *The Undersea World of Jacques Cousteau* TV-series, a real-life underwater human habitat was constructed at a depth of 100 metres. Cousteau wanted to proof human ability to live in an underwater environment. This *habitat* and Cameron's platform share many features, including the moonpool. Yet, whilst Cameron's moonpool shows no other deep-sea creature and merely serves as the entrance for the NTI's water arm, the one in *Conshelf Adventure*, serves as a window to view the varied deep-sea wildlife attracted to the lights of this human-built facility. In turn, although the fictitious platform

is 600 metres below the surface, following the discovery of the Titanic wreck at 3,800 metres in 1985, subsequent news stories and a book published in 1987 all included images of deep-sea molluscs, fish and echinoderms (Ballard XLVIII-XLVIX). Moreover, even the story that inspired Cameron, H. G. Wells' *In the Abyss* (1896), features a deep ocean teeming with life. Both *Conshelf Adventure* and the Titanic photographs depicted a vibrant deep ocean, a fact that Cameron disregarded to place the godlike NTIs.

From a narrative perspective, the NTIs' solitude makes them mysterious and powerful beings since no other creature could possibly live there, underlining the *god-like* status Cameron was aiming for. When Lindsay and the platform workers are discussing their origin, they rapidly assume they must be from outer space (*The Abyss* 01:30:10):

> *Lisa (Kimberly Scott)*: So you think they are from down there originally? Or from… You know.
>
> *Lindsay (Mary Elizabeth Mastrantonio)*: I don't know… I think… I think they are from… You know [points up], some place with similar conditions. Cold, intense pressure.
>
> *Catfish (Leo Burmester)*: Happy as hogs in a waller down there, probably.

In reality, the NTIs' home is rooted in our world: the underwater scenes in *The Abyss* were filmed in an abandoned unfinished nuclear power plant in South Carolina. The Cherokee Nuclear Plant was one of several plants left unfinished in the late 1970s, due to an internal company crisis, incorrect energy demand forecasts and the social backlash following the Three Mile Island disaster in 1979 (Hultman and Koomey 66-69). Cameron used the sturdy infrastructure of the nuclear reactor to build an underwater set. As Keegan relates, he didn't film at sea because Hollywood was not willing to pay the overpriced budgets of the past (Keegan 146). In a *the-bigger-the-better* narrative, both Keegan's biography of James Cameron, *The Futurist*, and the documentary *Under Pressure: Making 'The Abyss'* portrayed the set as a "crazy" project that:

> would involve pouring thousands of yards of structural concrete and installing enormous filtration systems and pumps and a row of twenty-thousand-Btu heaters to warm the 7.5 million gallons [28.390.588 liters] the tank would hold to a comfortable temperature. What they were planning wasn't just the largest underwater set ever built; it was a feat of industrial engineering (Keegan 148).

In other words, *The Abyss* set was very resource intensive. According to *Under Pressure: Making 'The Abyss'*, it took a total of 41 million litres of water[2] to fill both tanks (28 million for the bigger one alone). The crew built a steel set inside the tanks, capable of

2 Equivalent to the yearly consumption of 845 people in Spain in 2018 (INE, "Estadística").

resisting the pressure from the water. After filming was over, *The Abyss'* underwater set was abandoned. The water in the tanks came from a "nearby lake" and was heated and chlorinated through a pipeline system, shown in *Under Pressure: Making 'The Abyss'*. The chlorination during the first days of shooting was problematic, dyeing the hair and irritating the skin of crew members (*Under Pressure: Making 'The Abyss'* 00:08:50), and even corroding their underwater suits in the end (00:43:42). The discourse surrounding the chlorine damage crew members suffered is seen in the documentary as an artistic sacrifice for being a part of something big, rather than an abusive labour practice:

> The water was getting a little misty and we couldn't shoot very well on it. So a little bit more chlorine was put into the tank. Which was fine except for everybody who was not wearing a helmet, they would be getting a free dye job. We would see all this people starting to look like Troy Donahue (John Bedford Lloyd in *Under Pressure: Making 'The Abyss'* 08:55-09:08).

As John Bedford Lloyd says, it comes with the territory and is even something to laugh about. Although James Cameron takes it more seriously, there is a lack of self-criticism, seeing it as a necessary sacrifice to make the movie:

> Everybody got their hair blushed white, and the hair fell off our arms and we all get chlorine burns. It was borderline kind of having to go to the hospital […]. We ended up having to grease up with Vaseline from head to foot like a bunch of Channel swimmers. And keep working too, of course, because we were making a movie, and we did have to get the shots done. But it was just hell… And that's how we started, and it got worse (James Cameron in *Under Pressure: Making 'The Abyss'* 09:20-09:47).

No environmental impact report has been unearthed from the production but, as producer Gale Hurd explained in an interview, there were some structural problems with the piping system: "And the tank always sprang leaks on Sunday, our one day off, or at 4 in the morning" (Harmetz). Since chlorine is used to disinfect water, any leak would clearly harm the environment. As some studies point out, chlorine use in pools is under discussion due to its toxicity for human beings and the fact that aquatic life is particularly sensitive to it (Stringer and Johnson 65; 15). In James Cameron's later film *Titanic* (1998), the Mexican community living near the filming tank complained about the effects from dumping chlorinated water into the ocean, as well as on local wildlife and fisheries (Larios Zepeda and Muñoz Martinez). Lastly, in order to simulate a dark underwater abyss, Cameron covered the tank's surface with seven billion propylene pebbles (*Under Pressure: Making 'The Abyss'* 12:32).

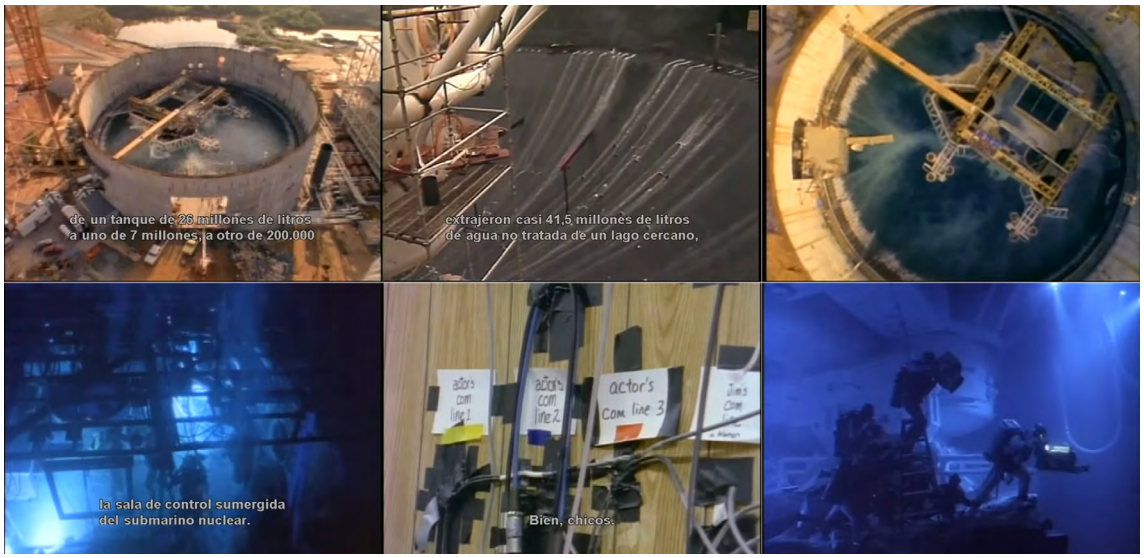

Figure 2. *The Abyss* set in a nuclear plant (*Under Pressure: Making 'The Abyss'*).

After analysing production, it makes sense that CGI god-like aliens would be the only *living* beings in this chlorinated home. Even though Cameron could have added animals, such as those found around the *Titanic* shipwreck or shown in *Conshelf Adventure*, he chose to portray the deep sea as empty. Indeed, as Champion has argued, deep-sea mining companies have used images of an empty seafloor to promote their endeavour in recent years, a practice James Cameron has notoriously defended:

> I've seen an awful lot of seafloor. And while there are some amazing creatures, they tend to be clustered in small habitats. What you mostly have is miles and miles and miles of nothing but clay […]. As a staunch conservationist, I think it's a question of the relativity of wrong here. What they're doing in Indonesia and the Congo and the Amazon and Peru, Chile is wrong […] To do it in the abyssal seafloor, where there's very little in the way of a rich and diverse community, I think is less wrong (James Cameron in Cecco).

The tsunami sequence illustrates how Cameron is able to claim the ideology of a "staunch conservationist" while making resource-intensive films and supporting deep-sea mining. As stated earlier, the tsunami comes at the end of the film, after the anthropomorphic NTI appears and brings Bud to the abyssal vessel. Once inside, Bud watches a screen of water showing human media broadcasts announcing a global tsunami. People in US cities appear tiny set against the huge inescapable wall of water. When he asks the NTIs why they are doing it, their answer comes in a fast-cut sequence of exploding nuclear bombs. After this montage, the media reports reappear but show the wave receding into the ocean. Bud asks why they have put a stop to it and NTIs show the text message where he expressed his love for Lindsay and the sacrifice he was willing to do. The inevitable tsunami is stopped by the god-like NTIs in response to indi-

vidual sacrifice and love. Moreover, Bud is the head of a fictional underwater platform, in the line of traditional white, male oil "adventurers" who both reinforce the link between the oil industry and cinema, and reproduce the petro-masculinity narrative (Cordal). Cameron's message is clear: regardless of all wars and nuclear disasters, "one good man" (with the help of god-like NTIs) can save humanity.

This individuality resonates with James Cameron's production process, as well as the discourse surrounding his work. Most discussions centre on how the film, and the industrial engineering developed especially for it, were a *genius idea*, as supported by Keegan's book *The Futurist: The life and films of James Cameron* and the documentary *Under Pressure: Making 'The Abyss'*. Chung explains that "[t]his rhetorical emphasis on the director's vision reflects not only a disproportionate attribution to the creative genius of one person but also an inequity in the accruement and distribution of economic and cultural capital" (20). Furthermore, the focus on the "director's vision" obscures problematic labour and resource use, as in the shoot for *The Abyss*. In the fictional world, Bud could well continue with business as usual after the tsunami, i.e. drilling at the bottom of the ocean. And in the real world, Cameron would continue his endeavours in unsustainable filming, i.e. shooting *Titanic* and causing environmental and social impacts in Popotla, Mexico (Larios Zepeda and Muñoz Martinez).

4. The Spectacular CGI Garbage in *Aquaman* (Wan, 2018)

Aquaman is a 2018 Warner Bros film, directed by James Wan and starring Jason Momoa and Amber Heard in the main roles. The film tells the story of Momoa's Arthur (or Aquaman), whose father is a human and mother the queen of Atlantis. One day, Arthur is called on by the Atlanteans to reclaim the throne, currently in the hands of his half-brother Orm (Patrick Wilson). During his adventure, Arthur finds a mythical trident and beats Orm in an epic battle.

King Orm generates the tsunami in *Aquaman* in the first half of the movie, in response to a human submarine attack during the Council of the Seven Underwater Kings. Just before the tsunami, we discover this submarine attack was arranged by Orm in order to convince another king to support him. In terms of the filmic structure, this sequence is the initial turning point in the script. After witnessing the tsunami, the half-human, half-Atlantean Arthur accepts his responsibility to claim the throne and prevent a potential war between the two sides. Ironically, he does this by starting a conflict between the Underwater Kingdoms.

As in *The Abyss*, there is a *news sequence* in *Aquaman* showing the tsunami. Interestingly, the media depiction does not focus on fear but, rather, on how "decades of pollution have been thrown back onto land" (*Aquaman* 00:37:10). The images show rubbish and warships washed ashore. After the tsunami, Arthur decides to go to Atlantis to speak with Orm, accompanied by Mera. The trip to the oceanic city begins in a type of underwater disposal centre with containers, plastic refuse and other waste. Instead of reinforcing the environmental message, this scene is used for comedic purposes, thus normalising underwater landfill (*Aquaman* 41:20):

> *Mera (Amber Heard)*: I hid my ship in here.
>
> *Aquaman/Arthur (Jason Momoa)*: Listen, I'm not getting in that thing.
>
> *Mera (Amber Heard)*: Well, to get where we're going, you're gonna have to.
>
> *Aquaman/Arthur (Jason Momoa)*: Your fish ship has been marinating in chum butter. I'm gonna come out smelling like swamp butt.
>
> *Mera (Amber Heard)*: That'd be an improvement.

The landfill scene is an anecdotic 30-second sequence that heightens Aquaman's emotional discovery when he later arrives at the pristine Atlantis to meet Orm. The King of Atlantis uses an environmental argument to justify the tsunami (*Aquaman* 00:51:42):

> *Aquaman/Arthur (Jason Momoa)*: I came here to stop a maniac from destroying the world.
>
> *Orm (Patrick Wilson)*: I see. And how do you plan to stop the atrocities that the surface continues to commit? Because for a century, they have polluted our waters and poisoned our children. And now, their skies burn and our oceans boil.

The villain's question establishes a human-environment responsibility plot where the main protagonist has to face off with both Orm and humanity to address the pollution issue. Even Mera, the Atlantean who searches for Arthur and eventually becomes his partner, later highlights the problem (01:15:50):

> *Aquaman/Arthur (Jason Momoa)*: It's not like the whole surface looks like this! [Referring to the Sahara Desert].
>
> *Mera (Amber Heard)*: Oh, no, of course not. You've also got disgusting cities whose sewers empty out into our ocean and whole mountains made out of trash. And, oh, you've got great factories that do nothing but belch out filth and melt ice caps.

However, at the end of the film, one is left wondering what happened to this narrative thread. While Orm and others do mention human pollution in the first half, the issue fades away in the second, where action-packed scenes, fantastic creatures and wars

take centre stage. Orm's imperialistic ambition to become Ocean Master come to the foreground, and the environment literally fades into the background. There are myriad ways in which this purported environmental Hollywood production with an ecological discourse actually ends up washing it away. The focus here is on production.

Figure 3. The underwater landfill. Orm discussing the environment with Aquaman and two images of the tsunami (*Aquaman*).

There was an awareness about the production's impact in comparison to *The Abyss*. *Aquaman* was mostly filmed at Village Roadshow Studios in Queensland, Australia. There were also three on-location shoots in Sicily (Italy), Ouarzazate (Morocco) and Newfoundland (Canada). The filming at Village Roadshow Studios may be regarded as sustainable, since props and sets, such as water tanks, can be reused. That being said, during the making of *Pirates of the Caribbean: Dead Man Tell No Tales* (Joachim Rønning and Espen Sandberg, 2017), complaints were sent to production companies regarding chemical dumping at Village Roadshow Studios (Gold Coast Bulletin). Moreover, tentpole productions such as *Aquaman*, where cast, crew and equipment are moved across four continents, generate 3,370 tonnes of CO2 emissions on average (Sustainable Production Alliance)[3]. On top of this, although *Aquaman* collaborated with a handful of environmental institutions, the production was not awarded an Environmental Media Association Green Seal, unlike other Warner Bros productions from the same year, such as *Fantastic Beasts: The Crimes of Grindelwald* (David Yates, 2018), or other superhero movies, including *Avengers: Infinity War* (Anthony Russo and Joe Russo, 2018). However, the documentary *Aquaman: Making an Underwater World* (13:05)

3 Equivalent to the yearly emissions of 463 people in Spain in 2018 (INE, "Indicadores").

does show a crew member acknowledging certain strategies with a view to minimising environmental impact. Even more remarkably, Warner Bros collaborated with the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) to work on their native lands to film the "Dead King's Island" beach scene. The QYAC helped by

> providing cultural heritage, monitoring before and during filming and undertaking considerable earth works at South Gorge to install a temporary track onto the beach capable of transporting machinery and multi-million-dollar film equipment from Point Lookout headland onto the sands of South Gorge. Prior to earthworks Quandamooka rangers were involved in removing dune vegetation with the assistance of the local Bushcare group so that this same vegetation could be replanted at the completion of filming. Rangers also helped to construct the site and supported the film crew during filming, and were involved in undertaking rehabilitation activities at the site for several months post filming. The landscape today contains fewer weeds and has a dune formation consisting of endemic dune species (Fischer et al. 21).

Beyond the emissions and material impact from production, the vanishing of the environmental message in the script is linked to the worldbuilding strategies underpinned by spectacularisation and the virtual nature of CGI. As in *The Abyss* documentary, *Aquaman: Making an Underwater World* predominantly focuses on James Wan and his spectacular worldbuilding. Guy Debord does not define the spectacle as an excessive aesthetic but, rather, as a vision of a world that has been commodified (9). As Wan explains, "We have explored space more than we have explored the ocean floor on our own planet, so the opportunity to create this whole different world is so exciting for me" ("Aquaman: Making an Underwater World…" 00:38). By invoking the "unexplored ocean", Wan composites a new world by objectifying the real and drawing from its curious details to construct his own. As Debord explains, people become more detached from their world by creating every detail of it for the spectacle (19). Near fully virtual worldbuilding leads to an even more detached process that fails to acknowledge its links to material resources.

Aquaman credits eighteen different companies around the world that are directly linked to CGI production, especially in the USA, Canada, the UK, India and China. As Chung explains:

> [The] time difference between Australia and Hollywood is considered an essential element in ensuring a steady workflow. The rhetoric of seamless integration is thus deployed to achieve neo-Taylorist objectives, such as efficiency, labor productivity, and fluid continuity (25).

Chung has developed the concept of *media heterotopia* to recognise "the material practices of labor that take place in the collaborative process of digital filmmaking", especially in the VFX industry (43). A quick internet search shows how people in this

industry are exploited through *crunch*, *pixel-fucking* or industry outsourcing for cheap labour. While labour is obscured by the spectacular images in superhero movies, the environment is not even there in the first place.

Figure 4. Production images from *Aquaman: Making an Underwater World* and Village Roadshow Studios.

The tsunami sequence in *Aquaman* was assigned to Scanline VFX (Frei), with offices in Vancouver, Los Angeles, Montreal, London, Stuttgart, Munich and Seoul. All these locations are connected via underwater cables, with historical, political, social and environmental implications, as Starosielski explains in *The Undersea Network*. While scientific articles consider their environmental impact to be "negligible" (Jurdana et al. 79; Carter et al. 212), this claim is based on comparing it to bottom-trawling (Jurdana et al. 81). The computers used to create CGI are far from immaterial, indeed "manufacturing a 2 kg computer involves the extraction of 800 kg of raw materials. Generally, manufacturing electronic devices requires 50 to 350 times of their final material weight" (UN 31). Mining for components in electronic devices shows a geopolitical inequality curve, where most raw materials are extracted in the Global South, used for manufacturing in developing countries, and post-produced in developed countries (UN 50-52). Apart from river run-offs, this process has direct implications for oceans, including discussions surrounding deep sea mining.

Lastly, Amazon Web Services (AWS) (Grogan) credited Scanline VFX with using the AWS cloud computing system to render 450 VFX shots (out of the total 2,300 VFX shots in *Aquaman*) (Frei). This took "5,381,615 hours of rendering (or 614 years, 123 days, 23 hours and 18 minutes), averaging 152,700 tasks per day, using 2,000 dedicated on-premises nodes, 400 virtual nodes, and up to 600 idle workstations" (Grogan)[4]. Obviously, these *cloud*

4 A total of 3,139 years of computing for the full film, not counting pre-viz, post-viz and tech-viz.

services are not in the actual clouds, but rooted on land in the form of data centres. Amazon servers are the highest energy consuming data centre infrastructure in the world (UN 80). Amazon claims to produce enough renewable energy to cover its own consumption (Amazon 7), however this energy production might be outsourced[5]. Water consumption at the centres remains problematic and, as things currently stand, Amazon is only able to recycle 41% of the water needed to cool down its systems (Amazon 7). Far from being virtual, the internet and digital technologies (including CGI) are part of our material and socioeconomic reality. Moreover, one should not overlook film distribution itself, with video representing a high proportion of total energy consumption within internet infrastructure (UN 91).

We did not expect the producers and artists of *Aquaman* and *Aquaman: Making an Underwater World*, nor the films themselves, to acknowledge the digital footprint. Indeed, we posit that although *Aquaman* has an environmental message, it actually renders material resources invisible (including digital technologies), as reflected in the film's narrative. When Orm highlights environmental damage, he does so in a magnificent palace in Atlantis, completely untouched by pollution, even though plastic waste has reached the Mariana Trench. After the aforementioned "environmental scenes", the problem is not addressed any further, and the film ends as a spectacle of visual effects, with an underwater battle where whales and sharks are used as subaquatic steeds. Aquaman defeats Orm but fails to solve without solving the pollution issue; quite the contrary, they battle surrounded by explosions and "casualties", as Mera says (*Aquaman* 02:00:33). By using CGI, James Wan creates a *whole new world* disconnected from any environmental issues, where Atlantis stands as a shining beacon and garbage is found elsewhere. The inconsistent statements of Orm and Mera become the *spectres* of Aquaman, revealing, on closer inspection, the outsourcing and exploitation of labour, and the energy- and material-intensive CGI infrastructure.

Nowadays it would be difficult for Wan to defend *Aquaman*'s environmental message while causing actual explosions in the ocean. CGI allows him to do it because its own impacts are opaque and difficult to trace. Much like the pristine Atlantis, the discourse surrounding the digital world appears to be detached from reality. Bryan Hirota, Scanline FX VFX supervisor, explains the tsunami sequence comprises an "underwater digital coastline with numerous FX simulations for debris" (Frei). Therefore, even the rubbish is computer made. As Hunter Vaughan puts it in his critique of *Avatar* (James Cameron, 2009), "we accept the sacrifice of the real on the altar of screen experience" (143). *Aquaman* uses the resource-intensive medium of industrial cinema to create an

5 An example of this outsourcing is Ireland. Dublin has become a data centre hub housing AWS servers where data centres use up to 18% of the country's total energy output (UN 84). This uptake in energy consumption is not corresponded with new green energy facilities in the country and is facing social opposition (FitzGerald).

environmental film, while greenwashing its impact through CGI and appropriating a virtual discourse to decouple it from any actual environmental impact.

5. Commodified Plastic *Ponyo* (Miyazaki, 2009)

Ponyo is a 2009 Studio Ghibli animation film directed by Hayao Miyazaki. Ponyo is the magic goldfish child of Fujimoto, an underwater magician who hates humans for polluting the oceans. One day, Ponyo escapes Fujimoto's underwater shelter and ends up on a polluted coastline, where five-year-old Sosuke finds her and decides to take care of her. Eventually, Fujimoto appears and takes Ponyo back to the shelter where he is preparing a magic well that will create "an explosion of life to match the Cambrian Age, an end to the era of those abominable humans" (*Ponyo* 00:35:30). In trying to escape, Ponyo accidentally opens the well and causes a tsunami. She surfs the fish-shaped tsunami, transforms into human form and finds Sosuke. The tsunami sequence lasts for twenty minutes in the film. After the initial storm, Ponyo and Sosuke take refuge in Sosuke's home where Lisa, his mother, prepares dinner and the youngsters tire themselves out with play. Everything is flooded the morning after the storm, and Sosuke and Ponyo head out to find Lisa, who had gone to look after the elderly residents. They eventually find her in a jellyfish shelter under the sea now covering the retirement home. There, we meet Ponyo's mother and goddess of the Ocean, Grandmamare. In order to restore balance to the ocean, Ponyo decides to remain in her human form and Sosuke to care for and love her.

Figure 5. The polluted Japanese coast, the tsunami, Ponyo and Sosuke eating instant noodles, and the flooded human world (*Ponyo*).

Although Ponyo accidentally causes the tsunami, the film shows us how it is part of Fujimoto's plan to end human dominance over the planet with a view to fixing the pollution crisis. His opinion of humans is made clear: "Humans are disgusting […] All this waste, filth" (*Ponyo* 00:14:35) and "Human… What do you know about humans, Brunhilda [Ponyo]? They spoiled the sea! They treat your home like their empty, black souls. I was once long ago a human myself, I had to leave that all behind to serve the Earth" (*Ponyo* 00:31:23). The first twenty-five minutes of the film reinforce Fujimoto's statements by showing the urbanised Japanese coastlines. Both the underwater world and coast teem with dust, boats and waste. By contrast, Fujimoto's underwater refuge is colourful, pristine and filled with life, similar to Atlantis in *Aquaman*. Post-tsunami, Fujimoto's version of the ocean prevails, with cambric fish swimming in a submerged human world which, in contrast to earlier images, now contains neither waste nor dust, only boats. Since there is no longer any waste, the villain's intentions fade away and he turns to being a caring misguided father, in the same vein as Orm was a resentful brother or the NTIs merciful godlike creatures.

The environmental problem depicted at the beginning of the film disappears after the tsunami, giving way to a family narrative arc. This is particularly intriguing for Studio Ghibli, a company that has been previously praised for its approach to complex ecological issues in films such as *Nausicaä of the Valley of the Wind* (Hayao Miyazaki, 1984) or *Princess Mononoke* (Hayao Miyazaki, 1997). When looking at the representation of space in the film, Hui ponders a similar question:

> Why does the film linger on dynamic and romanticised shots of the magical and wondrous new environment [after the flooding] when it is at the same time communicating that this hybrid space cannot continue to exist and that the land and sea must once again be separated, when the initial separation seen at the beginning of the film resulted in a polluted, sludge-and-garbage filled sea? The answer is because of the need for the sea to be properly tamed and absorbed into the land (73).

Hui notes that in contrast to earlier Studio Ghibli films, Ponyo's ocean is "imbued with a sense of universal environmentalism", instead of Japanese history or folklore (69-70). This universalised take on ocean pollution contrasts with the localised inspiration for the Japanese fishing village of Tomonoura (Hui 61). For Hui, this leads to *narrative inconsistencies* as post-flood, there is no more rubbish and, even more surprisingly, no apparent destruction as the flooded city is shown to be at harmony with nature (73). Miyazaki has stated, "there is no point in portraying these natural disasters as evil events. They are one of the givens in the world in which we live" (Sotinel). However, Hui argues the "narrative's insistence that balance must be restored to the earth feels incongruous with

the film's simultaneous romanticisation of nature's encroachment" (73). In addition to the tension between a national and international identity outlined by Hui, the disappearance of the film's initial environmental ideas can also be linked to Studio Ghibli's practices.

When looking at the role of women in the company's history, Denison argues it "seems that there are inequalities remaining at Ghibli despite its proclamations about women, and despite its many independent, powerful female characters onscreen" (93). She points out how "our textual blinkers and focus on Ghibli's auteurs have blinded us to women's contributions, causing the women behind the scenes of Ghibli to remain 'overlooked'" (76). This aligns with Chung's *media-heterotopias* and her critique of the "director's vision" discussed in *The Abyss* (20). The focus on either representation or authorship alongside the "director's vision" may give the impression that practice and narrative match one another. However, this tends not to be true for movies immersed in a global capitalist system, such as *The Abyss*, *Aquaman* or *Ponyo*. As Denison puts it, the "variety, complexity and openness" of female characters "support the idea that Studio Ghibli might be inferred to be a feminist film studio" (75) but, as she shows, this is not necessarily true. A similar dynamic occurs for the environment: even though the company has been acclaimed for its ecological showcasing, its practices would seem to be misaligned.

Hayao Miyazaki proudly proclaimed that *Ponyo* was made without using CGI. (*Making of Ponyo* 12:22). Animation in Studio Ghibli underwent a notable transition from *Princess Mononoke* onwards, marked by the establishment of a dedicated computer graphics team (Denison 115). The first fully computer-animated film produced by Ghibli was *My Neighbors the Yamadas* in 1999 (Denison 115), and was followed by the extensive integration of CG in later films including *Spirited Away* (Denison 118). Traditional animation at Ghibli was based on cel animation, a technique that breaks down the image into separately animated layers (Denison 99). Fully digital animation is also based on this technique (cel-style animation), but can also be used to enhance cel animation by colouring, harmonising layers and adding details such as particles or three-dimensional landscapes. For *Ponyo*, Miyazaki's intention was to work without the computer graphics that had been in use in the studio since 1994 (Denison 108). Nevertheless, in *Making of Ponyo* (27:55), Michiyō Yasuda explains the computer colouring process of the film. Apart from that, the traditional animation was done by creating 170,563 drawings and 1,139 backgrounds (*Making of Ponyo* 11:17; 22:40). Seeing them as "drawings" and "backgrounds" disconnects them from their material origin: trees. Studio Ghibli's Totoro Environmental Foundation partly counters this impact through tree planting and environmental activities. In addition, trees were significant in the construction of Ghibli Park,

where the company took pains to not "fell" any trees (BBC). However, Studio Ghibli had to buy paper, and it came from felled trees in other parts of the world.

In 2005, the paper industry in Japan imported 69% of the wood it used (Hidayat 173). Even though the country recycled 70% of the paper it produced, it was the leading wood-chip importer in the world (Hidayat 175). According to Hidayat, Oji Paper Co. and Nippon Paper —the largest paper companies in Japan and 7th and 8th largest in the world— respectively imported 80% and 70% of the wood they used from different countries, including Australia, New Zealand, South Africa, Canada and Brazil (198). The industry is far from welcome in these offshored forests and local protests have been a common occurrence since the 1980s ("Fast-tracked end"; Vanstone). In all likelihood, the wood used to make Ghibli's paper originated far from Japan, in an offshored monocrop forestry plantation or a native forest. Animation, CGI and on-site production all have an environmental impact and, the more companies become integrated into global dynamics, the greater this impact becomes. Regardless of its filmic narratives, Studio Ghibli is an example of this.

A media-mix analysis of Ghibli shows another type of indirect impact: merchandise. When Ponyo was released, the company had almost 40 shops across Japan where they sold plastic toys. As Tvorun-Dunn and Pascaru state, in "media franchises like Ghibli, the potential for any media to effectively imagine alternative economic and environmental relations, appears at odds with the consumption-driven mediums through which contemporary stories are relayed" (887). These researchers found Ghibli's merchandise originated in a factory "located along the Pearl River, whose waters are dangerously polluted by microplastics from the over 15,000 plastics manufacturers in operation by the water, funded by western countries seeking cheap labor and lax regulations" (Tvorun-Dunn and Pascaru 894). As demonstrated consistently in different studies, river and coastal areas are highly polluted due to population density and their "industrialized region" (Li et al. 4). Furthermore, the Pearl River is estimated to discharge 136,000 tonnes of plastic per year, creating a wide coastal area that is home to health risks due to pollution (Li et al. 2; 10).

Figure 6. *Ponyo* merchandise found online.

Film merchandise is not just a Studio Ghibli problem; indeed, *Aquaman* has probably sold more toys than *Ponyo*. What interests both Tvorun-Dunn and Pascaru and this research is how Studio Ghibli, which has been publicly and academically considered a standard-bearer in its representation of environmental issues, engages with unsustainable practices in direct opposition to these representations. *Ponyo*'s narrative inconsistencies are a keyhole to these practices. Tvorun-Dunn and Pascaru propose the term *commodifiable iconography*, i.e. "the representation of estheticized animated icons inherently fuels consumerism […] [and] promote[s] a mode of perception about the world which reduces life from complex […] into commodifiable iconography" (903). The character of Ponyo fits into this type of representation, with Miyazaki explicitly intending to make a chubby little creature (*Making of Ponyo*) to be commodified into toys, keyrings, mugs, t-shirts, face masks, etc.

During the tsunami scene, Sosuke and Ponyo take shelter in Sosuke and Lisa's cozy house. In one scene, Lisa prepares instant noodles which Hui (79-81) identifies as packaging for Nissin Chikin Ramen, an "iconic symbol of modern Japanese culture" (80). The fast-cooking ramen brand appeared in 1958, coinciding with the expansion and popularisation of plastic packaging in the same decade (Li et al. 1). Fast consumer products are closely tied to single-use plastics and new laws around the world are starting to introduce bans on them to put a halt to pollution. The scene shows Ponyo and Sosuke tossing the noodles into boiling water and, after a cut away, the plastic packaging disappears. In a hand-drawn movie, this can be seen either as an ellipsis or as yet another narrative inconsistency. Either way, it is a moment where the main characters adopt the same consumer patterns leading Fujimoto to view humans as "filthy". Plastic bags suddenly disappear, as does the film's waste sub-plot. The unsustainable nature of Studio Ghibli merchandise is obscured to ensure the film works.

6. Conclusions

This article has analysed the inconsistent narratives and production across three films: *The Abyss*, *Aquaman* and *Ponyo*. The films engage with pacifist and environmental discourses that are not reflected in their creation and distribution processes. The opprobrium of the nuclear arms race in *The Abyss* contrasts with its harmful production in an abandoned nuclear plant, as well as its individualistic message in response to a global problem. Aquaman's commitment to ocean conservation is set aside for a virtual spectacle whose production processes have very real *non-virtual* consequences. In turn, *Ponyo* presents a polluted Japanese coastline reminiscent of Studio Ghibli's own

pollution impact in producing its merchandise. The article centres on one aspect and impact per film, with a particular focus on production. However, a broader film analysis framework could reveal further impacts. For instance, Stine suggests we look at how other industries have developed alongside cinema by looking at

> how the leisure time of the movies, as noted by the Frankfurt School, restored workers for another long day at the job; how the distribution of movies and other audiovisual entertainment has driven the demand for electronics and semiconductors; and how cinema has from its beginnings promoted broader patterns of consumerism (6).

As he argues, "there is no carbon-neutral production" and cinema is part of the spectacular economy outlined by Debord (6). Further examples include the Kodak film plant that polluted the Genesee River with celluloid wastewater, and the different streaming platforms that account for 67.35% of internet traffic (5; 8). Thus, films generate pollution across all stages, and not only during production: in pre-production through the industry's inherent immersion in an industrial economy; in distribution through the use of streaming platforms and physical cinema spaces; and in merchandise by generating consumer desire and capitalist dynamics. As such, "the relationship between the ecological crisis and cinematic representation cannot be thought of as a oneway street leading from progressive films toward progressive ecological change" (Stine 9). The article has interrogated this relationship in order to illustrate how the actual film-narrative is also affected.

The research initially aimed to analyse the *narrative inconsistencies* between the messages and representations in *The Abyss*, *Aquaman* and *Ponyo* (i.e. production *spectres*). The article argues that positioning the environmental and pacifist message on the villain's side creates a tension where protagonists have to fight against discourses critical of human pollution and wars. Although the arguments may initially justify the different antagonists' actions, the tsunami is shown to be a step too far, leading the scripts to move away from their original premise, and focus instead on individual sacrifice (*The Abyss*) or family problems (*Aquaman* and *Ponyo*). On an ideological level, this could be seen to resonate with the killing of environmental activists in Colombia, the imprisonment of whale defender Paul Watson in Japan, or the criminalisation of groups like Futuro Vegetal in Spain. Like the villains in the three films, their actions are deemed excessive, thus stirring society to counteract them. This is a very different narrative to what was noted earlier with regard to the *Don't create a wave* movement, where the embryonic association that would later become *Greenpeace* protested against the US's nuclear tests in the Pacific and their capacity to generate tsunamis and pollution.

In terms of production, this article explores Stine's thesis through a "media-heterotopia" approach (Chung). By exposing filming practices through an industrial and market perspective, it demonstrates how cinema cannot be disassociated from global capitalist dynamics. The aim is to bring cinema back down to earth, moving it away from immaterial representation and discussing it without a sense of artistic reverence. James Cameron, James Wan and Hayao Miyazaki are not lone geniuses, since this individualization obscures the effort of production. As the article suggests, ecocinema benefits from this non-directorial approach by focusing on the collective action of both human and non-human. In this sense, *The Abyss*, *Aquaman* or *Ponyo* are not *their* films. Quite the contrary, they are a product both of mass labour commonly performed by exploited and outsourced workers, and material resources from extractive economies. Film narratives cannot and should not be decoupled from this reality.

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