Behind the Lens: Exploring Wildlife Films' Portrayal

A framing analysis on environmental threats in nature documentaries' narrative

Student Name: Daniel Voges
Student Number: 661645

Supervisor: Dr. Yến-Khanh Nguyễn

Master Media Studies - Media & Business
Erasmus School of History, Culture and Communication
Erasmus University Rotterdam

Master's Thesis
June 2024

Word Count: 16.234

Behind the Lens: Exploring Wildlife Films' Portrayal

ABSTRACT

In recent years, audiences with a keen interest in visual entertainment could perceive a significant increase in awareness surrounding nature documentary titles. This phenomenon raises questions about the overarching role of documentaries, contrasting techniques of film storytelling to its scientific claim. Through the growing public interest in nature content, there is an increasing emphasis on the accountability of media producers in shaping narratives that engage audiences while addressing pressing environmental issues. This study explores how selected wildlife documentaries portray the impact of nature hazards by examining communicative frames employed in their textual narratives. In specific, the thesis addresses the following question: "*How are environmental threats framed among the narrative of international nature documentaries?*". To answer this question, eight different documentary titles were analyzed, sourced from production outlets BBC, Netflix, and National Geographic. These titles all applied to the wildlife documentary genre and were released after 2016 to ensure comparable scientific standards. For extracting the frames, the study utilized qualitative content analysis, complemented by framing analysis using both deductive and inductive reasoning. Deductive frames were derived from prior research in news and environmental communication, encompassing Scientific Evidence, Economic and Ecologic Consequences, Public Health, Responsibility, Morality and Ethics, and Solution frames. Key insights from the research primarily reveals the dominance of Ecological Consequences and Moral perspective framing. Additionally, there is notable consistency among Netflix and BBC titles, considering the disruptive influence of streaming platforms predicted to disrupt the industry. Overall, the findings validate previously outlined frameworks while contributing a nuanced understanding of sub-categories and inductive frames, such as Examples of Hope. In light of these outcomes, practical implications underscore the critical role of further academic frame verification and expansion. In addition, filmmakers are encouraged to deepen their understanding of documentaries societal impact as cultural product, as well as experimenting with Solution frame focused formats. The study itself is limited by its sample size, and the transatlantic Western-European-American point of view. Future research should aim to transfer the framework to enhanced datasets, as well as investigating in the audience framing effects of nature content.

KEYWORDS: *Framing analysis, nature documentary, environmental communication, environmental risk, climate change*

Table of Contents

1. INTRODUCTION

In 2021 the controversial case of Seaspiracy emerged, sparking a widespread communicational debate. The documentary itself represents a new era of film content, produced by globally distributing streaming services. The documentary's popularity is evident in its metrics: the YouTube trailer garnered 4.7 million views next to its 34.254 reviews on the largest film rating platform IMDb. As reviewed by Marine Biologist Daniel Pauly (2021, para. 2) Netflix decision to highlight wildlife threats and harmful fishing practices to more than 200 million subscribers, is initially a positive step. Similar to this, The Guardian underscored the popularity of the trending documentary positioned in the global top 10 next to its influence of celebrity endorsement (McVeigh, 2021, para. 3).

In contrast, Seaspiracy is harshly criticized for its factual misrepresentation by overemphasizing conspiracy claims, while placing the responsibility on viewers to change their diets and stop eating fish (Pauly, 2021, paras. 4-5). MSC as the leading eco-certification for seafood, prompting a response to address the critical issue of millions of people worldwide relying on seafood as their primary source of protein (MSC, 2021, para. 8). Similarly, The Guardian outlined instances of factual distortion: projections of an ocean devoid of fish by 2050 and concerns over industry affiliations within fishing labels (McVeigh, 2021, paras. 10-15). Issues that advocacy groups like the IMMP or environmental scientists actively combat.

Monbiot (2021, para. 5) encounters publicly the success of producers Ali and Lucy Tabrizi, noting the direct confrontation with power, a strategy that often eludes other media productions. In summary, Seaspiracy is recognized for its eye-opening revelations and powerful storytelling, though it faces criticism for its sensationalist framing and alleged factual inaccuracies. This sparks the question of the ultimate role of documentaries, contrasting techniques of film storytelling to its scientific claim (McVeigh, 2021, para. 17). Through this noticeable rise in public interest of nature content, there is a growing emphasis on the accountability of media producers in shaping narratives that engage audiences while addressing pressing environmental issues.

1.1 Goal of study

This thesis will explore how environmental threats are framed in nature documentaries. In recent years, audiences with a keen interest in visual entertainment could perceive a significant increase in awareness surrounding wildlife content. Despite their growing

relevance, the subject of environmental threats is prominently positioned within public discourses, which underscores the production companies' responsibility towards their framed narratives (Freytag & Possler, 2024, p. 2). As similarly stated in The Guardian, "Wildlife storyteller have long wrestled with how to tell this uncomfortable tale while keeping audiences engaged." (Greenfield, 2020, para. 4).

As outlined by Bousé (1998, p. 126), nature films encompass visual representations depicting natural world and its inhabitants. Presented information display environmental behavior and interactions, while aiming to entertain, educate and partly advocate for conservation. Nature threats in contrast, are defined as environmental disruptions culminating in a state of natural crisis. Commonly, they are connected to humanity by persistent overutilization and degradation of vital natural resources to pose a significant threat to the environment (Fransson & Gärling, 1999, p. 369). Documentaries can be considered merit goods, serving a collective desire and extending their value beyond mere entertainment (Doyle, 2013, p. 95). While Jones et al. (2019, p. 421) align on the importance of educational content adoption, they highlight significant market driven differences in production scopes between public broadcasters and streaming players. Gouyon (2016) concludes documentaries and creators have "the authority to speak for nature" (p. 26), which once again expresses the importance of assessing the accuracy of wildlife films in depicting of nature and its threats.

In order to achieve the objective of this thesis, framing theory is applied, to analyze nature documentary scripts within a qualitative content analysis. Entman (1993, p. 51-52) laid the theoretical foundation of framing research, enabling the assessment of power and ideology in textual communication. This study will apply the underlying concepts of his theoretical construct, the framing paradigm, to develop a frame matrix tailored to environmental communication. The adoption of the well-established deductive framework by Semetko and Valkenburg (2000, p. 95) further assisted the refinement of frame categories to analyze and investigate in nature documentaries. Lastly, the research will utilize framing outlines previously identified in environmental research (Davis, 1995, p. 286; Badullovic et al., 2020, p. 2) to extend prior studies focused on news research.

In summary, this research aims to apply existing knowledge of framing to explore its application in a relatively understudied domain of environmental communication. Through qualitative content analysis, the study investigates how nature documentaries leverage their narrational function to frame the existence and consequences of environmental threats. The research focuses on key international production outlets, that have demonstrated recent significance in the realm of wildlife films: BBC, National Geographic and Netflix. The goal

of this study is not to examine the effects of framing, nor the visual construction within the documentaries. Instead, it focuses on investigating the portrayal of environmental threats and in which way this is exemplified and conveyed in the narratives.

1.2 Research question

Summarizing recent literature, a clear lack of knowledge is present for exploring the impact of framing strategies on conservation issue perception (Jones et al., 2019, p. 423). Therefore, research suggests complementing qualitative approaches by exploring the presence of framed biodiversity threats (Jones et al., 2019, p. 423). More specifically, academia does not persist substantial ideas, how varying narrations of nature films determine public comprehension (Aitchison et al., 2021, p. 1144). Badullovic et al. (2020, p. 14) add to this perspective, both quantitative and qualitative methods should be employed to better understand framing within the environmental subject. Lastly, Louson (2018, p. 34) particularly mentions the need to better understand documentaries precision and representational efforts. Based on this, the research question of this thesis is formulated as follows:

RQ: *How are environmental threats framed among the narrative of international nature documentaries?*

By using qualitative content analysis of appearing frames in the scripts narratives, it is anticipated to find a diversity of frames across different production outlets or titles included in the sample. To the best of the researcher's knowledge, there is no research investigating the narrational framing methods on a range of nature documentaries. This study contextualizes these effects within the evolving landscape shaped by streaming services. Hence, a framing analysis should contribute insights on the perception of nature content, aiming to understand the communicate power it may exhibit.

1.3 Academic and societal relevance

In terms of academic relevance, an existent body of research investigates the role of framing within environmental communication. Newspapers are widely recognized for their discerning approach to frame natural disasters (Vasterman et al., 2005, p. 111). Transferred to visual nature content, concerns were raised regarding their accuracy in portraying nature

threats. This is exemplified by the de-contextualization of human agency in environmental contexts (Campbell, 2014, p. 71). Additional research differentiates documentaries' framing in two substantial categories: one that relies on disconnecting tendencies and users' attention, the other through unfiltered, raw human impact documentation (Sullivan, 2016, p. 750; Freytag & Possler, 2024, p. 1-2). Jones et al. (2019, p. 422) emphasize, while some documentaries are seen as public good having an education mission, others apply a more pronounced commercial narrative. Lastly, academia is highlighting the process of framing in environmental communication, which ultimately influences how reality is interpreted and comprehended (Badullovic et al., 2020, p. 14). Consequently, nature documentaries are essential for securing public backing for climate and wildlife understanding.

Societally, the films capture a broad audience, with holding nine of the top 30 shows on IMDb (2024, para. 1). The first episode of the 2023 launched BBC series Planet Earth III, garnered an audience of 10.6 million viewers within the United Kingdom (BBC, 2023, para. 1). Although Netflix does not release official viewership numbers, main producer Alastair Fothergill has articulated their overarching ambition of reaching 1 billion people globally (Singh, 2019, para. 11). While this may appear ambitious, it emphasizes the disruption caused by streaming players, both driven by economic considerations and commitment to social responsibility. In this context, particularly wildlife documentaries, are frequently associated as merit goods, as they provide educational content benefiting society as a whole (Doyle, 2013, p. 95). Their value may be challenging to quantify in market terms, as the content sometimes transcends mere entertainment. This societal relevance as merit good is exemplified by Netflix decision to upload the full Our Planet series freely accessible on YouTube, with episodes reaching on average 30 million views. This strategy was implemented in response to a teacher's request to access documentaries for educational purposes, thereby enhancing its social impact (Netflix, 2020, para. 2).

Still, public debates revolve around the moral obligation of documentaries. Some voices criticize the shift from celebratory to cautionary environmental tones (Lyster, 2023, para. 4), while others evaluate their critical narratives as long overdue (Greenfield, 2020, para. 17). In conclusion, the series Blue Planet II demonstrated the communicative power in shaping mindsets, corporate and predominantly political agenda setting (Males & Aelst, 2021, p. 41; Gell, 2019, para. 1).

1.4 Outline

The introduction has outlined the problem statement, research gap and question, along with highlighting academic and societal relevance. The upcoming theoretical framework will provide a structured overview of key concepts and the applied theory of framing analysis. The methodology chapter will offer a detailed account of sampling, data collection and procedure of qualitative content analysis. Subsequently, results will be presented, illustrated by textual passages extracted from documentary scripts. The conclusion will critically discuss the findings in relation to the theoretical framework and their societal impact. Finally, limitations and practical implications will be addressed.

2. THEORETICAL FRAMEWORK

2.1 Historical outline on nature documentation

Following Arendt and Matthes perspective (2016, p. 455-456), nature films serve as audiovisual representations of events in the natural word. They encompass geographical landscapes, as well as diverse realms of flora and fauna. Moreover, all documentaries consist of similar components, wherein fundamental elements incorporate the interplay of visual imagery, narrative, and soundtrack (Rabiger, 2015, p. 74-75). Particularly the narrative can be delineated into its structural framework, tone and underlying motivations, while aiming to warn the audience of the whims of humanity (Rabiger, 2015, p. 75). Nature documentaries in specific play a pivotal role as mediator between conflicting perspectives of scientific knowledge and common public comprehension within contemporary culture (Rosteck & Frentz, 2009, p. 10). Campbell (2014, p. 61) advocates a more critical perspective, asserting that programs like National Geographic or BBC offer a distinctive portrayal of nature threats close to phenomenalism.

In the history of nature filmmaking, Disney's Seal Island marks a milestone, recognized as one of the earliest true-life-adventure films in 1948 (Benedictus, 2016, para. 1). Until 1960, additional fourteen documentary films contended for eight Academy Awards, underscoring their growing significance and cultural resonance (Benedictus, 2016, para. 2). Audiences derive pleasure from an escapist storyline, grand spectacle enhancement, captivating attention, immersion in exotic settings and charming depictions of wildlife (Jeffries, 2003, p. 528). As outlined by Benedictus (2016, para. 8), the introduction of BBC into the genre announces a new era, prioritizing authentic content over staged dramatization of animal behavior. Louson (2018, p. 17) reaches a similar conclusion, asserting BBC's Planet Earth represented a pivotal moment in 2006: its expansive scope and visual scope transformed the wildlife filming industry, while preceding decades were characterized by reality TV-style programs featuring pet or animal attack shows for entertainment purposes. Notably, Louson (2018, p. 17) associates BBC productions, despite their authentic style, with a tendency to steer clear of themes related to science, politics, and conservation. From a critical standpoint, this assertion appears to be only partially valid. Although new filming technologies facilitate the adoption of less intrusive filming techniques (Rabiger, 2015, p. 92-93), the resulting narrative is leaning towards more instinctual and evocative narration. Scholars differentiate those directing types by assigning the category "Blue Chip films" (Bousé, 1998, p. 126). According to the author they encompass elements of closed narratives with authoritative

narration, absence of political-historical references and minimal to no evidence of human activity (Bousé, 1998, p. 134-135).

In addition, in recent years global streaming platforms have additionally shaped the domain of nature content and its associated narratives. An analysis of documentaries produced by Netflix in recent years has revealed an augmentation of 479 titles within their portfolio (Lordache & Raats, 2022, p. 8). The majority addresses themes encompassing political, social, and environmental concerns, thus assisting in fostering awareness and participating in broader global discourse. "*Money shot"* productions, namely Netflix' Our Planet and Seaspiracy have underlined commercial success to build new income streams (Aitchison et al., 2021, p. 1140). This trend distinguishes from the historical avoidance of socio-critical narratives, which may have been perceived as deterrents for advertisers, financiers or directors. Presently, it enables broader audience engagement and positions the company as an advocate for climate consciousness (Lordache & Raats, 2022, p. 15). Jones et al. (2019, p. 421-422) suggest public stations must prioritize broadcasting educational content as merit products, while private streaming platforms face greater economic pressures. Despite similarities in visual content, Netflix's Our Planet emphasizes biodiversity hazards more than previous BBC productions – nearly 15% of the series wordcount is dedicates towards this narrative.

Streaming players additionally disrupt the industry through their application of market analytics pertaining to trending topics. This is exemplified by the strategic approach of releasing multiple episodes to extract viewers behavioral patterns associated with each topic (Hassenger, 2023, para. 10; Lordache & Raats, 2022, p. 7). Aligned with global environmental movements, streaming platforms analyze audience's identity to refine their content portfolio towards nature-centric themes and facilitating rapid innovation (Aitchison et al., 2021, p. 1140). Lastly, streaming players also exemplify proactive approaches by expanding content barriers, directing viewers to online landing pages, addressing threats, and providing actionable steps for change (Hofman & Hughes, 2018, p. 524). Another advantageous aspect of digitalization for nature documentaries is expanding international distribution and increased exposure. Previously, films circulated through television broadcast windows, as national broadcasters typically held rights, with producers rarely exploring secondary markets (Doyle, 2013, p. 92).

While these developments create beneficial circumstances for content productions, it also outlines their gained responsibility – streaming players position threats of biodiversity within the mainstream (Jones et al., 2019, p. 423).

2.2 Evolving portrayal of environmental threats

As elucidated in the introductory section, an environmental threat is characterized by the excessive use and degradation of essential natural resources (Fransson & Gärling, 1999, p. 369). As extending definition WWF (2024) states the delineation of human-induced activities around "pollution, deforestation, overexploitation of resources and habitat destruction" (para. 2). These factors present substantial hazards to biodiversity and ecosystem functions underscoring urgent needs for immediate action to mitigate and conserve (WWF, 2024, para. 3). While above definitions acknowledge human impact as main environmental threat, another widely adopted definition to environmental hazards is differentiating in the environmental threats themselves and potential impact to humans as main intersector. As Cutter (1996, p. 530) states, variations in environmental risks range from famine to technological risks, their impact on distinct regions and the exposure of likelihood for each. In contrast, Fransson and Gärling (1999, p. 370) take a definition on environmental concerns, entailing the assessment of attitudes regarding factual information, including behavior and actions impacting the environment.

This concern included as narrative in post-modern nature documentaries is likewise changing over time. Contrary to the proposition stated by Louson (2018, p. 17), it is imperative to acknowledge nature documentaries do not distance from narratives employing empirical scientific data or considerations of humanitarian consequence – the films are incorporating increasingly complex scientific standards to contrast the escapist portrayal of surrounding nature (Jeffries, 2003, p. 529). Further, Jeffries (2003) is stating and therefore reinforcing the view of the vast media representations: David Attenborough is borrowing his voice for "scientific authority" (p. 533). Correspondingly, Gouyon (2016, p. 26) aligns on the progression of wildlife filmmaking. In his position it has shifted from an inferior position to a status of equal partnership with science in the co-production of knowledge. This reflects the larger societal movement of environmentalism in multiple spheres and predominantly within contemporary heritage. As Gouyon concludes: "Film and television are both a reflection and contribution to changes in culture" (2016, p. 27).

2.3 Connection of environmentalism and nature films

Considering large reach and impact, research still lacks a sufficient perspective how media communication influences human perception and comprehension of the natural world (Jones et al., 2019, p. 423). According to Lewthwaite (1966, p. 3) environmentalism itself is defined by dynamic interactions between humans and their environment, focusing on

individuals adapting and responding to their surrounding within an ecological context. The most adopted definition is taken by Pepper (1984), stating concepts and behaviors shaped and contributing to an interest in environmental issues (p. 13). This entails the range from limited focus of plastic disposal to more profound concerns for the planet's future in contrast to capitalism and human consciousness (Pepper, 1984, p. 14). Lakoff (2010) in contrast, takes a more modern and critical perspective by formulating "the natural world is being destroyed and it is a moral imperative to preserve and reconstitute as much of it as possible as soon as possible" (p. 80).

Further, there is an adoption of two prominent perspectives which gradate the concept of environmentalism: determinism, and the environmentalist concept. While environmental determinism acknowledges the ecological dominance of nature controlling human actions, the environmentalist concept focuses more on the relationship between individuals actively seeking to shape their environment (Lewthwaite, 1966, p. 22).

A substantial body of literature addresses theoretical questions within media ecology, exemplary of the connection of environmental communication to green mindsets of the receivers (Campbell, 2014, p. 59; Jones et al., 2019, p. 423). In the aggregate, nature documentaries yield heightened individual well-being and contribute to an elevated sense of felt responsibility towards the environment (Keltner et al., 2017, p. 6). Further research contents the direct connection between nature content and increased environmental behavior, elucidated through an examination of individuals' donation behavior (Janpol & Dilts, 2016, p. 95; Arendt & Matthes, 2016, p. 468). Arendt and Matthes (2016, p. 468), underscore that pre-existing environmentally conscious behavior amplifies consequential impacts of consuming nature content. This corresponds with Lakoff's (2010, p. 73) characterization of environmental frames as conceptual structures encompassing pre-existing knowledge for comprehending environmental subjects, which emphasizes once more the influential role of ecological narratives in shaping perspectives. Barbas et al. (2009, p. 67) obtained similar findings concerning significant impacts, still viewers tend to state generic statements avoiding inclusion of social cost, which indicates a lack of explicit commitment.

This lack is further substantiated by Hynes et al. (2021, p. 1141), who posit prior exposure to the Blue Planet II series does not yield any discernible enhancements in preferences or perceived value for marine conservation. Recognizing this and similar findings concerning prior environmental values (Arend & Matthes, 2016, p. 468), research needs to consider differences in content, as well as audiences' pre-postures that may influence outcomes as confound variable. Lastly, nature content demonstrates its impact not only on

shaping perceptions notably through increasingly globalized distribution cycles, but also in fostering topical awareness, particularly evident within the realm of social media. As emphasized by Fernandez-Bellon and Kane (2019, p. 7), observable peaks in awareness regarding depicted wildlife species were identified through cross-analysis of episodic BBCs Planet Earth II releases and corresponding audience engagement on Twitter and Wikipedia.

Recent research shows, nature films do not only provoke changes in environmental awareness and postures for individuals, rather than having the power to shape cultural movements and ultimately politics. This comprehensive societal impact can be illustrated through examination of three distinct case studies: First to mention, the documentary Blackfish demonstrated its significant cultural influence, highlighted through an examination of SeaWorld stock prices alongside qualitative interviews with key stakeholders involved in its production and operation. The film gained global awareness by employing elements of criminal investigation, particularly scrutinizing SeaWorld's controversial treatment of Orca whales in their entertainment parks. This ultimately culminated in incidents, portrayed through dramatic reenactments. Boissat et al. (2021, p. 1189) discovered Blackfish catalyzed a collective movement opposing marine mammal captivity, driven by the significant audience response, emotional resonance, and its strategic timing of release.

As second case study, the media documentary approach around the Spanish Franco regime during the 1930s to the 1970s can be examined. Research conducted by Tabernero (2018, p. 78) explores the authoritarian environment influencing production and distribution of film content, particularly nature documentaries under the regime's control over media content. It has been emphasized that nature content still effectively engaged audiences by addressing their concerns and expectations nurturing emotional connections and promoting active participation in shaping ecological narratives (Tabernero, 2018, p. 79). The resulted societal impact is particularly noteworthy, given the constraints imposed by the dictatorship on the media. This ultimately resonated with audiences and catalyzed emergence of green movements.

As third case and most commonly known, a scrutinized Blue Planet II effect was sparked by BBCs series launch in 2017. Despite its impact on audience awareness (Gell, 2019, para. 2-5), it demonstrated a substantial influence on political agenda-setting and in particular the enactment of laws addressing plastic pollution (Males & Van Aelst, 2021, p. 51). It is imperative to note subsequent research failed to verify significant effects causing behavioral change (Dunn et al., 2020, p. 7), a circumstance potentially attributable to a limited sample

size. Evident are changes in attitudes towards plastic reduction, alongside heightened media coverage and increased discourse in both public and political debates (Dunn et al., 2020, p. 7).

All of the aforementioned nature documentaries garnered extensive public, media, and political attention, warranting further investigation of the portrayed frames that contributes to such notable social buzz.

2.4 Classic framing theory

As generally recognized, McLuhan (1964, p. 1) outlined in his theory about Medium as the message, how media, through selective presentation and emphasis influences audience perception and interpretation of factual content. While this theory vividly underscores the significance of communication mediums, classic framing theory places greater emphasis on the language used to convey narrative content. According to Goffman (1974), media frames help audiences to "locate, perceive, identify and label" the discourse around them (p. 21). Those frames encompass semantic roles, interconnected with other frames to exercise influence over rational decisions (Lakoff, 2010, p. 71). Aligned with the beforementioned responsibility of nature documentaries, the notion of framing provides an opportunity to assess the power and ideology of textual communication (Entman, 1993, p. 51). Moreover Entman (1993) is credited with formulating the widely adopted theoretical construct known as framing paradigm, encompassing "particular problem definition, causal interpretation, moral evaluation and treatment recommendation" (p. 52). Framing theory assesses relationships among the most salient clusters (Entman, 1993, p. 57). Van Gorp (2010, p. 16) adds the importance for near-mutual exclusivity to exhibit framing intersections and bear relevance for each individual.

Framing itself can be used in differed styles, hermeneutic, linguistic or deductive (Matthes & Kohring, 2008, p. 258). In the context of this research, deductive reasoning provides the most structured process, increasing clarity and reliability particularly beneficial for handling large datasets (Van Gorp, 2010, p. 93-94). A prominent framework, developed by Semetko and Valkenburg (2000) differentiates in the framing categories "conflict, human interest, economic consequences, morality and responsibility." (p. 95-96), which extends Entman's framework (1993, p. 51) in a more elaborative approach. This outline is derived from a macro analysis of vast newspaper articles, indicating the dominance of the responsibility frame. Their research contends crucial differences mostly between media, not singular news outlets within newspapers (Semetko & Valkenburg, 2000, p. 106), which suggests a societal relevance for the framework.

The cultural importance and potential impact of framing was presented by Kahneman and Tversky (1984), showing significant results of altered decision making by just reversely framing “likely deaths” and “likely saved” (p. 343). In more detail this was exemplified by frames of “saving 200 people for sure” in contrast to “one third chance of saving 600 people” where a significant tendency for option one was found. In reverse with a framing of “400 people dying for sure” and “one third chance of nobody dying”, the research panel tended to take the safer option. This discrepancy undermines inconsistencies resulted by the sensitivity of decision-making towards framing effects (Kahneman & Tversky, 1984, p. 344).

A more contemporary illustration involves an examination of the Turkish media landscape and its significant impact on shaping public opinion. Vreese et al. (2011, p. 194) have found significant differences in the level of support for the Turkish EU membership, resulted by exposure to negative or positive news framing. A follow up survey verifies findings, while pointing to stronger effect of negative frames which statistically outweigh positive frames (Vreese et al., 2011, p. 195). In connection to nature content, this could suggest the potential for stronger framing effects of dramatized documentary narratives leading streaming players like Netflix to apply this technique to attract viewers from an economic perspective.

Notwithstanding, framing approaches are likewise criticized by lacking consistency, due to their nature of subjective investigations through linguistic lenses (Matthes, 2009, p. 359). Van Gorp suggests utilizing “culturally embedded frames” (p. 86) to decrease subjectivity in the analytical process. This can be exemplified by grounding research on shared cultural understandings rather than individual interpretations. Entman et al. (2009, p. 175) would conclude the approach is excessively applied across a wide range of topics, lacking the necessary specificity and focus. Framing methodology requires a consideration of full framing effects rather than focusing too narrowly on niche subjects. In the context of this research emphasizing framing narratives of individual documentaries, there will be high attention to the investigation of connections between different framing categories, the contextualization of visual technique and the producing outlets. Entman et al. (2009, p. 185) culminate the discussion with raised concerns about the eventuality of strong pre-existing attitudes superseding notable framing effects on public opinions. This critique underscores the risk of oversimplification when concluding weak effects despite presence of clear postures within audiences.

Since previous research has still proven the relevance (Entman, 1993, p. 51-53), alongside verification of framing effects (Kahneman & Tversky, 1984, p. 343-344; Vreese et

al., 2011, p. 195), it is deemed as indispensable to investigate the subject of framing explicitly within the realms of environmental communication. Therefore, the following sub-section will give an outline on existing research of environmental framing and the role of visual media in nature threat framing. Ultimately, a deductive framework in consideration of this paper will be derived.

2.5 Framing in environmental communication

While contributions of Entman (1993, p. 51) and Van Gorp (2010, p. 92) are mostly applicable to news media and political discourse in terms of framing categories, nature films are in need for an adapted framework, more specific to its field. Lakoff (2010, p. 76) contends, there indeed can be a *false* framing of nature, achieved by portraying elements as isolated and distinct from humanity. Environmental frames themselves are described as inherent conceptual frameworks helping the comprehension of environmental threats, based on audiences pre-existing knowledge as exemplary ideological values (Lakoff, 2010, p. 74). Nevertheless, contemporary nature content is multimodal, integrating visuals, sound, music and spoken dialogue to communicate messages, which will be considered as context for analysis (Campbell, 2014, p. 63).

Scholars have recently expanded their discourse beyond the contained content of nature films to consider the role of visual media in shaping narratives surrounding nature. In her analysis, Louson (2018, p. 17) contends that media theorists historically emphasized its educational role at the expense of lacking a perspective on the contents dual function, both as educational content and entertainment. Building on this premise, spectacle aids in shaping public perception without necessarily compromising the accuracy of documentaries itself. Corresponding to David Attenborough, BBC productions have wielded significant influence on the public through their factual narration style. Documentaries play “an instrumental role in helping to put this issue at the forefront of the public agenda” (Shukman, 2019, para. 7).

A view on specific frames used in environmental communication helps to summarize and further synthesize an adapted framework which will be applied to a chosen set of nature documentaries. In alignment with previous mentioned critics of too narrowed applications (Entman et al., 2009, p. 185), Davis (1995, p. 285) holds an analogous position, advocating the need to consider interplays of singular frames and a more holistic perspective. His primary research suggests general environmental communication influences subsequent responses significantly. Given that, a negative framing addressing the impact on exemplary own age cohorts, shows larger influence compared suggestions for acting with no significant

behavioral results (Davis, 1995, p. 295). This aligns to the previous outlined research by Vreese et al. (2011, p. 195) and thus appears to be consistent across various forms of framing, not limited solely to news and political contexts. Opposing effects could be seen in a study by Morton et al. (2011, p. 108) investigating the mediation of climate change framing effects on individual intentions. They concluded, a communication emphasizing losses reduces with high uncertainty reduces intended actions, whereas communication efforts to prevent losses is boosting intended action. As tree major frames, Davis (1995, p. 286) underscores the attributed categories problem definition, the target considering current and future generations, as well as recommended activities. A more sufficient perspective is taken by Badullovic et al. (2020, p. 2), who extracted a large amount of applied environmental frames in more than 250 research papers within climate communication. In this comprehensive view, they clustered common frames of scientific, economic and environmental frames. Further topical communication framed with public health, disaster and morality and ethics gains more scholarly attention. According to the authors, conceptual framing frameworks still lack consistency (Badullovic et al., 2020, p. 2), even if the outlined framework provides a clear structure.

Scholars have also explored frames tailored specifically to nature documentaries, yet it is imperative to point at the gap within this domain of literature, as articulated in the introduction. One example, investigated by Campbell (2014, p. 64) is the differentiation in jeremiad, fatalistic and visual frame categories. While the jeremiad frame holds a normative, attitudinal position, which places human agency as responsible for natural disasters, the fatalistic lens sees natural event as “endured” by people, without connecting their responsibility (Campbell, 2014, p. 64). Remarkably this aligns directly with assertions exempted by Lewthwaite (1966, p. 22) around environmental determinism and the environmentalist concept. A visual framing utilizes the intrusive emphasis on imagery (Campbell, 2014, p. 64), while the research primarily emphasizes narration, they still will be consulted in cases of ambiguity. Additional research examined by Sullivan (2016) refers to a “money shot” and an “anti-capitalist” (p. 750) frame of nature films. Money shot frames focus on spectacular images, captivating viewers’ attention while provoking disconnective tendencies to depicted natural environments. Anti-capitalist frames in contrast display unfiltered documentation of human interaction with nature by industrial structures, fostering identification and empathy (Sullivan, 2016, p. 750).

In summary, it is imperative to note recent research lacks a clear outline for the categorization of frames used in nature documentaries. Consequently, an adapted framework based on previous sub-section notations will be synthesized in the following section.

2.6 Synthesis of findings around environmental framing

Above literature summarizes recent outline on the methodology of framing, how it originated and how it is currently discussed within the subject of environmental communication and visual nature content. While no pre-determined adopted framework is existent, this literature-driven approach assists in deriving specific tailored research, without the risk of lacking a view of individual framing categories. The subjects are divided into Generic, environmental communication and nature documentaries, to outline recent framing literature from a broad perspective to very practical applications.

Table 1

Overview table of central framing approaches in the context of this research

Subject	Frames	Author and year
Generic	Particular problem definition, causal interpretation, moral evaluation, treatment recommendation	Entman (1993)
Generic	Conflict, human interest, economic consequences, morality and responsibility	Semetko & Valkenburg (2000)
Environmental Communication	Problem definition (gains or losses), target (own or next generation), recommended activities	Davis (1995)
Environmental Communication	Losing frames, gaining frames	Morton et al. (2011)
Environmental Communication	Most used: scientific, economic, environmental frames Increased usage: public health, disaster, morality and ethics	Badullovic et al. (2020)
Nature Documentaries	Jeremiad frame (human agency), Fatalistic frame (humans enduring nature)	Campbell (2014)
Nature Documentaries	Money shot frame, anti-capitalist frame	Sullivan (2016)

As outlined by Van Gorp (2010, p. 100) it is important to define frames exhibiting minimal intersections near-mutual exclusivity, where each association holds significant interpretative value. Given outlines research, assertions by Badullovic et al. (2020, p. 2) are deemed to deliver the highest fit in terms of applicability to nature content and holistically covering all relevant topical information. In addition, the frames Economic and Ecologic

Consequence, as Morality, Ethics and Responsibility attribution, show contextual proximity to the prominently used deductive framework by Semetko and Valkenburg (2000, p. 95-96). Moreover, the framework incorporates relevant perspectives towards science and public health, that are not exclusively pointed out for news framing. The framework also provides empirical support basing its analysis on a review of more than 250 environmental research papers (Badullovic et al. (2020, p. 2). As validated by Semetko and Valkenburg (2000, p. 95), it is useful to facilitate replication and find different in between media or within media. One objective is to continue integrating elements of inductive research to ensure certain framing categories are not overly constrained (Matthes & Kohring, 2008, p. 275).

The final framing employs elements of most of above-mentioned scholars and will be operationalized within the following chapter. The utilized framing categories are represented Scientific Evidence (Badullovic et al., 2020, p. 2; Rosteck & Frentz, 2009, p. 10), Economic and Ecologic Consequences (Badullovic et al., 2020, p. 2; Semetko & Valkenburg, 2000, p. 95), Public Health (Badullovic, et al., 2020, p. 2) Responsibility (Campbell, 2014), and ultimately morality and ethics (Semetko & Valkenburg, 2000, p. 96; Badullovic et al., 2020, p. 2). A particular Problem Statement (Entman 1993, p. 52; Davis, 1995, p. 286) applies to a majority of frames; however, it lacks sufficient academic support and relevance to warrant its own distinct category within environmental communication. Therefore, this is integrated within the frame of Scientific Evidence. Ultimately, the frame Solution (Entman, 1993, p. 52; Davis, 1995, p. 287) will display the last framing category as a recommendation treatment resulted on the urge of environmental threats.

3. METHODOLOGY

The following chapter will contain a methodological outline on the procedure of collecting, operationalizing, and analyzing the data to ultimately address the research question. The qualitative approach to the content analysis is explained, utilizing framing analysis as its guiding method. This serves to test the deductive framing matrix and identify inductive frames and sub-categories for an in-depth view that emerges from the nature documentaries scripts.

3.1 Justification of method

This papers research method follows a qualitative framework, elaborating how documentary producers conceptualize language and create realities for social comprehension (Brennen, 2017, p. 213). Further, it builds on framing analysis, while utilizing a deductive approach, aligning with categories developed by Semetko and Valkenburg (2000, p. 95-96) and Badullovic et al. (2020, p. 2). Frames themselves warrant scholarly investigation, given their enduring cultural persistence and their role in exercising influence and shaping perceptions of the political, landscape (Reese, 2001, p. 9-10).

Framing is interconnected with the framework of qualitative content analysis. According to Entman (1993, p. 57) the approach avoids oversimplified coding merely outlined positive and negative connotations, rather than assessing relationships within the most prominent clusters to extract ideologies. Qualitative content analysis is a common practice in communication research as it does not necessitate interaction and provides advantages of data access next to its non-intrusive and innocuous characteristics (Kellehear, 1993, p. 4-7). The objective is to achieve a systematic comprehension of narrative data, prioritizing essential elements and conceptual constructs, as articulated by Schreier (2013, p. 172-173). As previously noted, this methodology facilitates systematic scanning of large data sets (Van Gorp, 2010, p. 93-94; Schreier, 2013, p. 172), Further, in terms of flexibility frame codes are emerging from literature, as well as being extended from the data itself (Schreier, 2013, p. 176).

Qualitative content analysis aligns with the characteristics of nature content, considering their heightened awareness and associated communicative responsibilities. This is in line with Lakoff's assertion (2010, p. 72) stating communicators cannot evade framing; the pivotal inquiry persists regarding which frame are activated by what means within public sphere. The proposed method will help answering the research question by analyzing investigated frames

relationships, commonalities, differences, as well as unexpected deviations that will be added inductively.

While the outlined framework around environmental frames provides clarity about the methodology, the analysis needs to view the data through the lens of outlined concepts: environmental threats (Fransson & Gärling, 1999, p. 369; WWF, 2024, para. 3), function of nature documentaries (Arendt & Matthes, 2016, p. 455-456; Rabiger, 2015, p. 75) and environmentalism (Lewthwaite, 1966, p. 3; Pepper, 1984, p. 13). Within the procedure it will be explored how these concepts intersects within the context of wildlife film commentary, shedding light on nuanced dynamics between environmental messaging and environmental advocacy.

3.2 Data collection & sampling

This study conducts a purposive sampling which does not aim for generalizability rather than making qualitative sense of the drawn environmental world (Brennen, 2017, p. 218). First nature titles could be extracted from previous research, where they proofed academic relevance. One study examines the relationship between watching Planet Earth II and an increased sense of perceived emotions (Keltner et al., 2017, p. 1). Other quantitative content analyses investigate agenda-setting regarding plastic pollution in Blue Planet II (Males & Van Aelst, 2021, p. 41) or the emphasis on nature threats and conservation discussions in Our Planet (Jones et al., 2019, p. 421). However, none of these studies explore the qualitative framings applied, highlighting the relevance of including the mentioned titles in this sample.

Additionally, the rating platform IMDb facilitated an online search for assessing relevance, producing companies, genre, and general content outlines. To be selected, documentary films must satisfy the following criteria: thematically seen, the films provide generalist nature perspectives without solely focusing on specific local regions. Those documentaries are often exploring the interconnectedness of different species and ecosystems. The content must be narrated in English to provide comparability. The temporal scope extends back to the year 2016, to ensure chosen content is comparable according to scientific standards and cultural contexts. Moreover, this timeframe marks the initiation of substantial investments by global streaming platforms, namely exemplified by Netflix (Lordache & Raats, 2022, p. 8).

In terms of content, emphasis is placed on global production platforms, including Netflix, National Geographic (acquired by Disney), and BBC. This is largely driven by their attentional recognition: the aforementioned nine out of top thirty series on IMDb being nature

documentaries (2024, para. 1), are all (co-)produced by either Netflix, BBC or National Geographic. There are no contributions from other production outlets, which further demonstrates the relevance. A Statista search volume investigation (Bianchi, 2023, para. 1) reveals seven out of ten environmental documentary films being produced by either National Geographic or Netflix. The BBC, with major releases in 2026, 2017, and late 2023, finds no recognition in this data collection between 2020 and 2023. Ultimately the three outlets are the first to appear within desk research and finding remarks in previous mentioned research papers (Louson, 2018, p. 15; Campbell, 2014, p. 66; Jones et al., 2019, p. 421), showing both, their academic and societal relevance.

Attention is directed on first and last episodes of a season, ensuring the comparability of observed data in alignment with narrative considerations. In addition, selective films are taken into account, due to their vast receptions and provoked discourses (Greenfield, 2020, para. 4). The retrieval will focus on the textual data derived from wildlife film commentary. Concerning data collection, the website *sublikescript.com*, as well a publicly available subtitle data served as data source. All scripts were saved on a thumb drive, as well an online cloud, to ensure constant access to all available data. The scripts are saved and in same formats to guarantee consistency, this implicates data cleaning in order to remove filmographic instructions or closed captions. Access is provided by subscriptions to all leading streaming platforms, such as Netlix, Disney+ or transactional purchase via Amazon Prime. The word count differs between 2.000 to 5.000 words per episodes, with a total number of 15 scripts (7 documentaries with each two episodes plus A Life on our Planet as self-contained film). On average a documentary's duration amounts to 50 minutes, while A Life on our Planet represents the exception with 1 hour 23 minutes.

While initially analyzing a comprehensive set of nature documentaries, the research has been extended with the inclusion of Planet Earth III, offering further framing insights to reach data saturation (Schreier, 2013, p. 181). Following a thorough screening of National Geographic titles Before the Flood and Wildlife, these were excluded from the sample due to their predominant socio-critical themes. This diverged from the primary focus on wildlife, to endanger comparability with skewed frames and results. Potential implications are discussed in the conclusion.

Table 2

Summary of purposive sampling on nature documentaries

Producing company	Style of narration	Selected titles
Netflix	Engaging storytelling. Topical range of environmental topics and wildlife conversation.	A Life on our Planet (2020); Our Planet (2019), Our Planet II (2023)
National Geographic	Captivating narratives. Diverse environmental angles. Adventurous and exploring.	Welcome To Earth (2021); One Strange Rock (2018)
BBC	Educational content. Authoritative and informative narration	Our Blue Planet II (2017); Planet Earth II (2016); Planet Earth III (2023)

A final note regarding the narrator David Attenborough is considered pertinent. Given the above sample, it has to be noted that 6 of 8 (62,5%) chosen documentary titles are narrated by him. This warrants acknowledgement of a potential bias resulting from his influence on narration style particularly in addressing foundational environmental challenges. As noted by Richards (2023), "David will never do a narration on a script unless he's really worked on it himself." (para. 4). The further analysis is still deemed as highly relevant considering disparities in the script, content and storytelling across production outlets, as well as variations in production timelines.

3.3 Operationalization

To explore above outlined concepts within the textual data, the subsequent section will provide a succinct operational framework to answer the research question of framed nature threats in nature documentaries. This operationalization assists in elucidating data, facilitating conclusions and inferences within the systematic process of sense-making (Neuman, 2014, p. 209-210). The objective is seeking a finite set of non-intersecting frame packages, with each connection bearing significance (Van Gorp, 2010, p. 100). This will be examined by using deductive framing dimensions, altered accordingly to meet the requirements of this research:

Scientific Evidence frame. Not outlined in the classical framework by Semetko and Valkenburg (2000, p. 95), yet crucial to add to appeal to the public's understanding of nature threats. This connects to remarks by Rosteck and Frentz (2009, p. 10), emphasizing the common public comprehension through transparent scientific knowledge. Further this frame

will be investigated how modern wildlife films own scientific authority (Jeffries, 2003, p. 533) while making contributions to science in a co-production of knowledge. As noted in the framework synthesis, a particular problem definition framing (Entman, 1993, p. 52; Davis, 1995, p. 286) was incorporated within scientific evidence, due to its contextual proximity and lack of self-sustaining relevance as own category. Given documentaries' increasingly mediating role in communicating conflicting perspectives (Rosteck & Frentz, 2009, p. 10), this is investigated by broad factual statements, such as development of climate change or phenomena such as overpopulation.

Economic Consequences frame. Investigating the interconnectedness of endangering climate developments and ramifications for global economies (Semetko & Valkenburg, 2000, p. 95). Within environmental communication, this is primarily exemplified through financial gains and losses, economic opportunities, or the general costs of climate change (Badullovic et al., 2020, p. 11).

Ecologic Consequences. Adapted from the economic consequences frame (Semetko & Valkenburg, 2000, p. 95) and aligning with the subject of nature content. This frame emphasizes the impacts of climate change, primarily referring to causal chains (Badullovic et al., 2020, p. 11). This is illustrated through specified impacts on flora and fauna, exemplary frames by species extinction or mass migration. Beyond merely examining the impacts, demanding communicative scrutiny involves describing climate change as "apocalyptic" or "catastrophe" (Badullovic, et al, 2020, p. 10), or portraying a generally dystopian future.

Public Health frame. Likewise derived from the framework by Badullovic et al. (2020, p. 2) public health frames gain increasing relevance within environmental communication and therefore will be investigated within nature documentaries. They are examined through direct humanitarian health threats, such as appearing diseases or altering chronic health conditions.

Responsibility frame. Based on suggestions by (Semetko & Valkenburg, 2000, p. 96), this frame investigates the attribution of accountability within different groups of humanity. This manifestation is predominantly anticipated through allegations targeting corporations or governmental bodies, exemplifying political agenda setting (Males & Van Aelst, 2021, p. 51). In relation to the dimension of morality, it likewise corresponds to perceived responsibility on individuals' level, with nature content elevating sense more conscientious actions (Keltner et al., 2017, p. 6). Additionally, the frame is investigated through a Jeremiad and Fatalistic approach, one holding humanity responsible for climate change, while the other identifies endurance of nature's power and its disconnection to human activity (Campbell, 2014, p. 63-64).

Morality frame. Centering philosophical questions and "moral prescriptions" (Semetko & Valkenburg, 2000, p. 96). Likewise moral and ethical considerations are included in Badullovic et al. (2020, p. 29) framework. Key inquiries represent the trajectory of human aspirations, or the ethicality of meat consume. In which way applies the contents' narrative suggestions on individuals' perception? Further, does the content apply a "we" narrative and suggests comments on "our" generation?

Solution frame. Ultimately, this frame investigates treatment recommendations as conclusions drawn by documentaries. These approaches are examined at the regulatory, governmental, economic and individual level, including activist collectives aiming to stop the climate crisis. Entman (1993, p. 52) highlighted treatment recommendation as a crucial frame within news research. Davis (1995, p. 287) further confirms its significance in environmental communication, primarily focusing on institutional guidelines such as recycling or conservation measures.

3.4 Data analysis

For data analysis, the outlined conceptualization framework is characterized by its structured yet adaptable nature (Schreier, 2013, p. 172-173). The coding frame of different dimensions helps to navigate the data and decides where linguistic phrasing eventually get assigned (Van Gorp, 2010, p. 101). Within the textual data, each sentence is considered as a single coding unit (Schreier, 2013, p. 176). The deductive approach consists of three main steps, outlined by Van Gorp (2010, p. 102) to increase structure and decrease subjectivity. The first step consists of generating a codebook, also referred to as *frame matrix*. This summarizes previous outlined framing categories that are applied on the data (Appendix A). To allow a coherent data analysis, individual frame categories need to provide mutual exclusivity (Van Gorp, 2010, p. 103; Matthes & Kohring, 2008, p. 266) to prevent inaccuracies in the subsequent data analysis. This aspect is similarly delineated within the categorization matrix proposed by Elo and Kyangäs (2008, p. 111).

The second step is applying the frame matrix on the data, while individual framing or reasoning devices as the usage of language or persuasive techniques are assigned to the outlined categories. All nature documentary scripts are coded manually. This step is ultimately divided into two phases: Pre-test and main coding. Prior to the main coding phase, the pre-test analyzed BBCs' Blue Planet II, to refine, verify and re-shape the frame matrix. This entailed coding sentences into the overall derived framing categories or assigning new

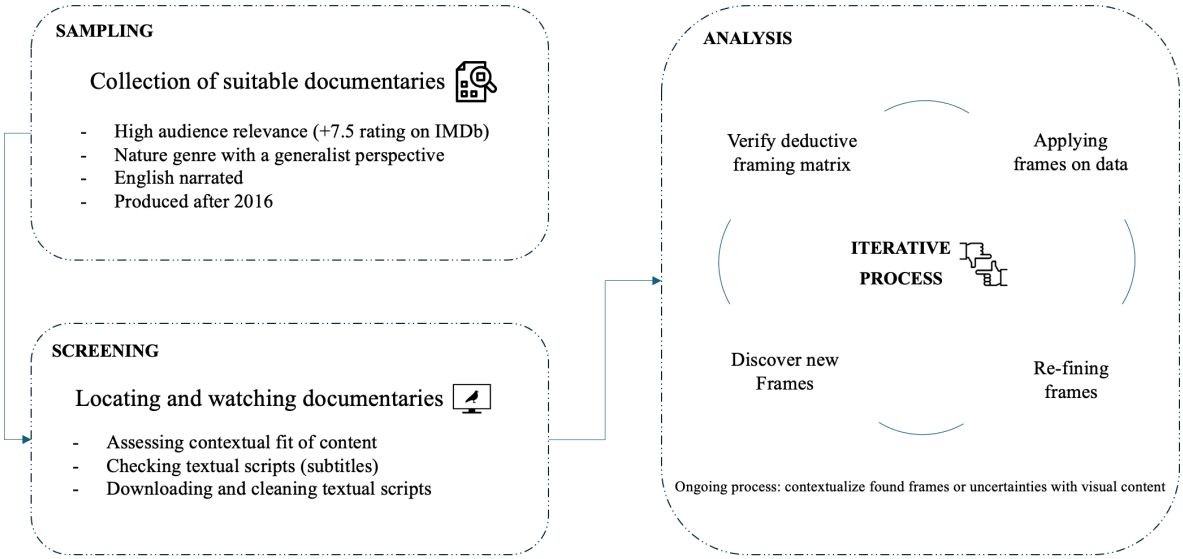
sub-categories. The sub-categories are listed, to allow a more in-depth differentiation of singular framing categories-both driven conceptually from research, as well from the data itself (Schreier, 2013, p. 176). In the main coding phase, the resulted frame matrix (Appendix A; Appendix B) was ultimately transferred to the remaining documentary scripts, to align in structure, exclusiveness, meaning and scope of work. When singular framing devices fit the same related dimensions or sub-categories, they are simultaneously assigned and grouped for clarity (Van Gorp, 2010, p. 104). Moreover, frames emerging inductively and expanding the predefined framework, were additionally noted and divided into sub-categories (Elo & Kyangäs, 2008, p. 112) (Appendix B). During the process not all identified frame units could be treated entirely without intersections, as already outlined as a challenge by Entman (1993, p. 52). To give an example: “We have overfished 30% of fish stocks to critical levels.” Stated in Netflix’ A Life on Our Planet in 2020. While this expression could be categorized to both frames, *Economic Responsibility,* and *Moral Collective Perspective*, the ones were chosen that appeared as dominant (Matthes & Kohring, 2008, p. 264).

The third and last step is investigating the weighting of determined frame packages. While framing analysis still comes as a qualitative approach, indexes and comparing of weighting helps to assess importance therefore derives schemes within the data (Van Gorp, 2010, p. 105). If textual elements seem essential, but are difficult to assign correctly to aforementioned dimensions, visual components of the documentaries will provide the necessary context, keeping in mind their multimodal nature (Campbell, 2014, p. 69). The overall process comes iterative, while going through singular steps repeatedly to adjust the frame matrix and increase reliability (Schreier, 2013, p. 173).

As supporting software, the qualitative analysis tool *Atlas.ti* was utilized, which comes with multiple forms of color coding, data aggregation, output visualization. All documentary scripts were loaded into the tool, analyzed script by script. All overarching and sub-categories of framing were named congruently to the self-defined tables, every category was marked with a different color to allow visual distinction within individual scripts (Appendix E). Furthermore, *Atlas.ti* delivers output options to compare the data, where in this case quantity and Sankey diagrams will help to display frame weightings (Appendix H).

Figure 1

Own visualization of research methodology



3.5 Reliability and validity

To begin, it is crucial to acknowledge the qualitative nature of this research, which inherently introduces a level of subjectivity that may threaten reliability and validity (Elo & Kyangäs, 2008, p. 113). As commonly observed and stated by Van Gorp (2005) "it is extremely difficult to neutralize the impact of the researcher in framing research" (p. 503). At a later stage, the author concludes a certain degree of subjectivity as inevitable, as interpreting relationships within overarching cultural frames requires the researcher's judgement (Van Gorp, 2010, p. 93).

Initially, this issue may be addressed through a degree of self-reflexivity, wherein the researcher critically evaluates the own role throughout the coding process (Haynes, 2012, p. 72-73). In this regard, it must be stated, that the researcher fosters dominant ecological beliefs, based on current scientific evidence acknowledging the threats of a human made climate change. Hence, the methodology was chosen to limit subjectivity and systematically apply the analysis, through the utilization of pre-established framing frameworks, extensive sampling, and an iterative comparative process (Schreier, 2013, p. 174). Additionally, coding a pilot test (Our Blue Planet II), assisted in assessing crucial factors in terms of mutual exclusivity, framing category criteria and overall unidimensionality (Schreier, 2013, p. 176-77). Within the framework of the researcher's analytical function, an additional challenge to validity arises from the prospect of confirmation bias, as elucidated by Patton (1999, p. 1994-

1995). This manifests the application of preconceived categories onto data influenced by personal inclinations.

Next to the gradual methodological guideline mitigating subjectivity proposed by Van Gorp (2010, p. 102), employing theoretical and analytical triangulation provides remedy (Patton, 1999, p. 1196). From a theoretical standpoint, the constructed framing matrix incorporates theories from classical news framing research and extends to insights from the field of environmental and ultimately nature documentary communication. Analytical triangulation based on peer-reviews conducted by the researcher's supervisor to rigorously interrogate coding concepts and outcomes.

3.6 Ethics

From an ethical standpoint, Stuart Hall (1997, p. 52) pointed out the representational role of the media, giving access to the social world, while shaping perceptions of self-identity as a construction of social meanings. Given this context, but also the non-intrusive nature and inclusion of publicly existent data, this paper does not entail substantial ethical considerations.

According to Kellehear (1993, p. 6), audio-visual records count as unobtrusive methods, which means they provide safety for both researchers and others involved. Kellehear (1993, p. 7) identifies the decontextualization of research subjects as a significant obstacle, in this case for artistic decisions on nature documentation or the general choice for wildlife film as focus of investigation. Still, the utilization and study of freely available data from online sources is considered ethical and permissible for further research (2013, p. 1478). In alignment environmentalism as a concept counts as an ideological subject (Pepper, 1984, p. 13) necessitating further investigation of large spread messages (Lakoff, 2010, p. 74).

To conclude, the research is in line with ethical considerations delineated by Pietilä et al. (2019, p. 53-55), which articulate four fundamental principles within the context of qualitative content analysis: autonomy, nonmaleficence, beneficence, and justice.

4. RESULTS

This chapter presents the results of the qualitative content analysis on the framing of environmental threats in international nature documentaries. Illustrative quotes from the dataset will highlight findings and strengthen comparison in between frames or documentary titles. The first sub-section will present the main findings, informed by overall frame weightings or frame dominance within titles. The second and third section will categorically display the overall framing matrix applied on the data, enhanced by sub-categories that emerged from previous research and the data itself. The fourth section examines newly identified inductive frames that are considered relevant and contribute to the construction of environmental threats within the content. The fifth section will present major variations among documentary outlets BBC, Netflix and National Geographic. Ultimately, a concluding section provides an integrated view of interrelations between frame units.

4.1 Main findings

An analysis of the overall data revealed the framing of *Ecological consequences* was the most prevalent, as indicated by its frequency in the dataset. Out of 749 detected frame units, 207 could be assigned to Ecological consequences, representing a total of 27.6%. It also emerged as the most dominant frame in 9 out of 15 scripts. Frames were considered dominant when the majority of codes within documentaries were assigned to their corresponding sub-category. The second most dominant frame was *Morality/Ethics*, appearing in 4 out of 15 scripts, while the frame of *Responsibility* prevailed in 1 out of 15 scripts.

Table 3

Overall Frame weightings in all documentaries

Framing Category	**Number of times coded**
Scientific Evidence Frame	93
Economic Consequences Frame	11
Ecologic Consequences Frame	207
Public Health Frame	12
Responsibility Frame	142
Morality/Ethics Frame	152
Solution Frame	40
Earth as Miracle Frame	*15*
Examples of Hope Frame	*43*
Needs for Individual Change Frame	*17*

Human Nature Connection Frame	*17*

The weighting of framing units for sub-categories is summarized in Appendix C. As the most dominant sub-category, an environmental *Impact on Fauna* (within the main frame of ecological consequences) was expressed in the documentary narratives. This impact was emphasized through affected wildlife, behavioral changes, migration patterns, or species extinction. As articulated in Planet Earth II: “animals must cope with the changes or disappear.”. Additionally, the sub-category of a *Collective Perspective* (within the main frame of Morality/Ethics) emerges as the second most dominant frame in the documentary scripts. This collective perspective is prevalent throughout a majority of the scripts and is often expressed by the pronouns “we” or “our”, as well as references indicating contemporary humanity constitutes a single generation. As One Strange Rock suitably puts it: “We’re all crewmates on the same ship.”.

In two scripts, A Life on Our Planet and Planet Earth II, all main frames appeared at least once, demonstrating a variety of frames used in the different documentary films. Nine scripts in total included five out of the seven main framing categories. Appendix H demonstrates the overall consistent and balanced distribution. However, it should be noted that no quantitative generalizations can be drawn.

It is noteworthy to emphasize *Economic Consequences* and *Public Health* receive minimal utilization as frames. This is rather unexpected, considering Economic Consequences is often highlighted as a major frame within news research (Semetko & Valkenburg, 2000, p. 95). Furthermore, environmental threats have been shown to have similar effects on the economy (Lakoff, 2010, p. 76), impacting areas such as energy transition, stock markets and business regulations. When Economic Consequences are discussed, they are often associated with human dependence on ecosystems, as evidenced by phenomena including rising sea levels and forced migration due to disruptions on food supply. “Already, cities like Miami are under threat”, stated in Blue Planet II. Lakoff (2010, p. 76) similarly identifies these interconnections with human health, which show a parallel absence of discussion within documentary narratives. Expressions of this frame are mostly connected to health-threatening (im-)balances of oxygen supply, as conveyed in One Strange Rock: “Without enough oxygen, our organs start shutting down.”. Additionally, human groups are depicted as threatening themselves through hunting localism or climate activism; however, the framing of public health remains predominantly moderate to non-existent.

In conclusion it is noteworthy to highlight the Netflix documentary A Life on Our Planet for its dominant application of environmental threats framing. This does not come surprising, as the feature films story line is inherently structured to depict drastic environmental changes during the lifetime of Sir David Attenborough. The documentary is primarily framed through accounting responsibility to humanity (by using the sub-category of Jeremiad Framing), shaping a moral message (sub-category Collective Perspective) and displaying ecological consequences (sub-category Impact on Fauna). In contrast, the documentary Welcome to Earth (Last Episode) stands out as the most escapist. Escapism is depicted by the immersion in exotic settings and charming depictions of wildlife according to Jeffries (2003, p. 528). If this episode articulates framing of environmental threats, it shows merely a direction of earth appreciation or presenting the wonders of nature, presumably as a call for preservation.

4.2 Presentation of overall dominant framing categories

This sub-section aims to address main frames which were present in the scripts and what sub-categories can be derived from the data itself. The post-coded framing matrix in Appendix A will give a complete overview including overall categories, sub-categories, definitions, and example quotes. The analysis begins with Ecological Consequences as the most prevalent frame in the data. Despite its dominant occurrence in the majority of documentaries, the category rarely yields impact in all of the four selected National Geographic episodes. Environmental threats are predominantly framed through their Impact on Fauna, as exemplary articulated in Our Planet II: “Across the island, chicks are dying.”. Correspondingly, the aspect of species extinction gets frequently underscored as pivotal concern, as evidenced in Planet Earth III: “These individuals are the very last of their particular species.”.

To emphasize, Impact on Fauna is by far the most dominant sub-category, with 104 framing units, compared to Collective Perspective, which has 64 units. Despite mentioned species extinction and changing behavioral patterns the documentaries often highlight the animals’ exposure to human-induced threats, such as plastic, light and sound pollution. Next to the Impact on Fauna, a *Geographical Impact* is framed in the documentary, expressed through melting glaciers, rising sea levels, light pollution or general habitat destruction. Planet Earth III depicts this through: “It’s far brighter, louder and busier than anywhere in the natural world.”. In contrast, the *Impact on Flora* does not show an analogous presence and is largely connected to hazards to corals and forests. Despite their crucial role in the ecosystem

(Pepper, 1984, p. 82-83), plants and general vegetation receive limited attention within this frame.

Ultimately, but of equal importance, the documentaries applied a *Disaster Framing* as sub-category within Ecological Consequences. This verbal escalation is already discussed within environmental news research (Vasterman et al., 2005, p. 111) as well as for documentaries (Campbell, 2014, p. 71). The observed concern entailed an exaggeration and partly de-contextualization of factual subjects pertaining environmental threats. As complemented by Badullovic et al. (2020) a disaster frame describes climate change as "apocalyptic or a catastrophe" (p. 10). A large extend of framing units embodying this catastrophic view were identified in A Life on Our Planet, reinforcing the documentaries self-identified status as a wakeup call: "It triggered an environmental catastrophe that had an impact across Europe". Analogously drastic this is expressed in Planet Earth III: "Scientists say that we're on the edge of a mass extinction". Likewise, an expressed dystopian view to the future contributes to the sub-category of Disaster Frame, being strategically deployed to have a habitual impact on the viewership, as in Planet Earth III: "Without urgent new commitments, the target of 1.5 degrees will be missed.".

Subsequently, a thorough examination of the frame Morality/Ethics reveals a significant prevalence of framing units. A profound moral perspective was prominent in all selected documentaries, with the exception of Our Planet II (First Episode). Most present within this frame and already mentioned in the previous section was the rhetorical use of a Collective Perspective, fostering the human earth connection to potentially perceive guilt. As A Life on Our Planet depicts it: "Our home was not limitless". Similar narrative space was granted to a moral framing towards *Acknowledgement of Fragile Nature*. In One Strange Rock this is articulated as follows: "…how fortunate we are to call this place home, it's complex, calibrated inter-connected … fine-tuned but fragile.". While large proportions within environmental communication tend to focus on the consequences and responsibilities of human acting (Davis, 1995, p. 286-287), the documentaries also take time to appreciate the smaller details – interconnections on micro levels or the necessity of ecosystem balance. Both sub-categories connect to definitional work on environmentalism as a concept (Pepper, 1984, p. 14; Lewthwaite, 1966, p. 3) stating the dynamic human-nature connection and increasing consciousness to act preservative. Other frames as sub-categories within a moral framing were connected to A*ppreciation of Planet Earth* as a whole, *Emotional Sadness* and *Acknowledging Animal Intelligence*. The latter functioned in different titles to equalize wildlife animals and humans as a race from an ethical standpoint, which can be seen in A Life

on Our Planet: “Animals that had been viewed as little more than a source of oil and meat became personalities”.

Lastly, the remaining predominant frame pertains to the assignment of Responsibility. According to Semetko and Valkenburg (2000, p. 96) a responsibility frame is prevalent in news research, being differentiated into the attribution to individuals, groups or the government. In the context of this environmental research, this frame was adapted to include *Individual/Group*, *Economic* and *Governmental Responsibility*. In addition, the perspective of a *Jeremiad Frame* (Campbell, 2014, p. 64) was added, ascribing accountability to humanity overall. It remains open to identify particular groups at both macro and micro levels and is exemplified by the word “humanity” overall. As stated in Planet Earth II: “Humans brought these and invaders here and now humans are having to control them.”. Upon deeper examination, the assignment of Economic Responsibility for environmental threats emerged as pivotal, notably underscored in a specific set of documentaries (A Life on Our Planet, Planet Earth II, Blue Planet II). In the remaining titles the frame remained largely absent. As Blue Planet II conveys it: “Evidence points to the burning of fossil fuels as the primary cause of these increasing levels of carbon dioxide.”. Noteworthy is also the examination of the Governmental Responsibility frame. While research largely aligns on the crucial governmental role (Males & Van Aelst, 2020, p. 52; Lakoff, 2010, p. 76), the framing of this subject remains highly selective in the sampled documentaries. A useful example is given in A Life on Our Planet: “A century ago, more than three quarters of Costa Rica was covered with forest. By the 1980s uncontrolled logging had educed this to one quarter.”. Additionally, and relatively unique is the progressed framing given in Planet Earth III, pointing the viewer directly to elections and the associated public-sector accountancy: “Every time you vote, in every election, please tick the planet.”. An individual responsibility is only rarely mentioned, however, when it is, it tends to focus on personal contributions to plastic usage or dietary habits: “If we all had a largely plant-based diet, we would need only half of the land we use at the moment.” (A Life on Our Planet).

Ultimately, as last sub-category within the Responsibility frame, a Fatalistic Perspective (Campbell, 2014, p. 64) is added, detaching human impact from natural disasters. This is nevertheless categorized within this frame, as it employs a phrasing of avoiding responsibility by highlighting natural events that significantly impact geography, wildlife and ultimately humanity. This is evident in Welcome to Earth: “Someone bigger than us. It’s like, um, God to us (…). So, we could be driving up there right now to a volcano that’s about to erupt.”. A similar perspective on natural phenomena is given in Our Planet II: “The Earth’s tilt drives all

migrations". While especially the latter would ignore human impact on habitat threats to wildlife, those specific frames show characters of fatalism.

4.3 Presentation of complementary framing categories

The following frames, while emerged from the documentary datasets, appeared both quantitively as qualitatively less dominant and therefore being logically separated from the previous frames. However, the units often entail a noteworthy perspective on environmental subjects, notably in contrast to recent research.

Regarding the frame of Scientific Evidence, the literature review already presented how nature documentation is evolving to actively participate in the co-production of knowledge (Gouyon, 2016, p. 27; Jeffries, 2003, p. 259). Additionally, Entman (1993, p. 52) emphasizes a particular problem definition as integral to news framing. In this research, the sub-category *Problem Definition* is approached through a comprehensive perspective, incorporating factual statement within a scientific framework. This is particularly evident in documentaries making broad yet scientifically substantiated claims about established issues. As articulated in One Strange Rock: "Millions of tons of plastic end up in our oceans every year.". This framing sub-category could be evidenced in all of the documentaries except Welcome to Earth and addresses generic assertions as in Our Planet II: "Our climate is warming".

Distancing from the traditional perceptions of documentaries solely as "Blue Chip films" (Bousé, 1998, p. 126), the films are anticipated to offer substantive contributions though *Cross-referencing Scientific Knowledge*. This can be seen in Our Planet: "Now, studies have shown, that there are seven times more wolves inside the exclusion zone, than outside it.". Moreover, documentaries would actively engage in advancing science itself, as a *Co-production Of Knowledge*, also outlined by Jeffries (2003, p. 533). This is evidenced in Planet Earth II, and often connected to remarks to the production team itself: "We can now show life on our planet in entirely new ways, bring you closer to animals than ever before, and reveal new wildlife dramas for the very first time.". This co-production not only focuses on displaying and reiterating familiar wildlife scenes. It also aims to explore new depths of the ocean, capture unknown behaviors and species, and compare footage to exemplify habitat destruction. In contrast, a few documentaries also demonstrated transparency regarding *Lacking Scientific Knowledge*, when the complexity of nature surpasses current scientific measurements. This can be seen in Welcome to Earth: "The new frontiers that challenge everything we thought we knew.". Other narrations would cover the unexplored nature of the ocean or the processing knowledge regarding noise and interconnections in the ecosystem.

Another pivotal subject conveyed in the nature documentaries is expressed through a *Solution* frame. This links back to Entman (1993, p.52) for a treatment recommendation in news research and Davis (1995, p. 287) in environmental communication; both examining the essential importance how a solution is framed to achieve the greatest impact within an audience. The Solution frame was not prominently featured throughout all documentaries, while the National Geographic titles entirely omitted solutions as treatment recommendations. Still the frame bears significance in terms of prominent placements at the end of documentaries to evoke viewers response. For further categorization it was divided into the two sub-categories *Governmental/Economic Treatments* and *Activist/Collective Treatments*. Governmental solutions are maintained in broad terms, primarily focusing on international cooperation, renewable energy sources and phase-out of fossil fuels. Economic solutions for protecting natural habitats are also mentioned occasionally, as seen in A Life on Our Planet: "The UN is attempting to create the biggest 'no fish' zone of all.". As exemplified in Planet Earth II, documentaries also recognize the interplay between nature and urban environments, proposing solutions as "greening the walls and roofs of our buildings" to create rich and extensive habitats. When emphasizing more localized collectivist activism, the solutions presented often highlight impactful human actions. Blue Planet II describes the protection of turtle hatchings and the preservation of birth routes of whale sharks. As articulated more broadly in Our Planet II: "and with our help, many animals are now overcoming the challenges of our modern world.". This underscores the reality showing many aspects of globalization as irreversible. However, they can be studied and integrated into a symbiotic relationship, particularly in terms of preserving the freedom of movement.

4.4 Presentation of frames emerged from the data

As outlined in the methodology section, the research also extracted inductive frames from the textual script data. The main emphasis should be on two framing categories: *Examples of Hope* and *Need for Individual Change*. These are directly interconnected with previously mentioned frames, particularly in terms of environmental threat claims and accountability. Additional frames that occurred are presented in Appendix B. The most dominant frame observed frame among those identified inductively was Examples of Hope, therefore categorized to the following sub-categories: *Recovery of Ecosystems/Species, Evidence of Functioning Ecosystems and Political/Economic Developments.* Here, wildlife in particular is often used to exemplify beneficial developments in nature. This is articulated in Planet Earth III, depicting positive human nature interference to create a lasting impact on ecosystems: "If

you can bring back one species, you can also do it with others.". Other articulations similarly express the recovery of particular species, locations or entire habitats. Further, advancements at the governmental and economic levels are crucial in illustrating Examples of Hope. This is expressed in Blue Planet II: "in 1986, those nations got together and agreed to put a stop to commercial whaling.". Overall, these examples contribute to balancing the overall critical narratives. The weighting between positive and negative framing, academically linked to assertions by Davis (1995, p. 286) regarding gains and losses communication, varies and therefore does not offer significant insights. It should be noted that as the frequency of critical claims increases in documentary scripts, more examples are likewise provided to maintain narrative balance (A Life on Our Planet, Blue Planet II – Last Episode, Planet Earth III – Last Episode).

A subsequent dominant occurring frame is expressed through a Need for Individual Change. The category is expressed through the manner in which documentaries advocate for specific questioning of own humans behavior. The frame units deconstruct the issue to the individual level. In Welcome to Earth the appeal urges viewers to observe own behavior and roles within the ecosystem: "Get out of my comfort zone… connect with the planet…and hopefully, inspire others to do the same". In particular the phrasing of a comfort zone, shows the critical state in which documentaries currently maneuver. This likewise links back to the proposed educational mission of documentaries (Jones et al., 2019, p. 422), as well as the balancing act how to communicate uncomfortable narratives while maintaining audience engagement (Greenfield, 2020, para. 4).

Inductive frames such as *Earth as a Miracle* and *Human Nature Connectivity* likewise emerged, yet have very limited presence in the narratives and lack sufficient academic support.

4.5 Findings comparing producing outlets

Conclusively, the analysis compared frame units connected to the varying production outlets Netflix, BBC and National Geographic. Recent research already outlined differences on film production and financing schemes with greater economic pressure for private rather than public productions (Jones et al., 2019, p. 422). On top of that, Jones et al. (2019, p. 421) synthesized the more distinct narrative towards nature hazards exerted by Netflix (Our Planet) in comparison to previous BBC productions. This aspect of the analysis similarly refrains from generalizing comparisons based solely on quantitative measures across production outlets. As highlighted by Van Gorp (2010, p. 106) the analysis extracted only suggestions,

comparing averages and dominant frames to prompt a scheme for exemplary multiple applied framing. The subsequent table entails framing quantities analogous to previous tables. However, the categorization of the sampled documentaries distinguishes between the three distinct outlets.

Figure 2

Frame weightings distributed by documentary production outlet (Screenshot Atlas.ti)

	BBC 6 346	NATIONAL GEOGRAPHIC 4 105	NETFLIX 5 307	Summen
1. SCIENTIFIC EVIDENCE 93	46	9	38	93
2. ECONOMIC CONSEQUENCES 11	7		4	11
3. ECOLOGIC CONSEQUENCES 207	111	4	92	207
4. PUBLIC HEALTH 12	6	3	3	12
5. RESPONSIBILITY 142	64	18	60	142
6. MORALITY / ETHICS 152	56	44	52	152
7. SOLUTION 40	20		20	40
α. EARTH AS A MIRACLE AND WONDER 15	4	10	1	15
β. EXAMPLES OF HOPE 43	16	2	25	43
γ. NEED FOR INDIVIDUAL CHANGE 17	8	5	4	17
δ. HUMAN NATURE CONNECTIVITY 17	5	8	4	17
Summen	343	103	303	749

Results, nonetheless, have to be seen in relation to the overall frequency of frame units occurred, as well as the sample size. In the above visualization, the comparably lower framing frequency for National Geographic becomes evident, which is connected to more escapist storylines. In this context documentaries focus more on celebrating the wonders of nature and less on highlighting environmental threats. As One Strange Rock conveys it: "...our world is full of wonders…hidden forces we can't see, and barely understand". Measured by their quantity, National Geographic titles only present a third of environmental threats, that were framed in any of the other outlets. A Solution Framing is entirely absent. When National Geographic titles apply a dominant framing, this is primarily driven by Morality/Ethics, as can be seen in One Strange Rock: "It really is enlightening to me how complex even a little butterfly is" or "everything is interconnected". Humanity is often portrayed as a minor component within a vast and intricate system, often lacking comprehensive understanding of ecological interrelations and resigned to adapt fatalistically to nature phenomena. In conclusion, the most notable distinction lies in the minimal expression of Ecological Consequences framing, such as in One Strange Rock addressing plastic pollution affecting Hermit crabs: "As we change our planet most life on earth struggles to keep up.".

The outlets BBC and Netflix in return and as already discussed in the main findings, apply a rather dominant framing of Ecological Consequences, primarily driven by Impact on

Fauna narratives. Broadly speaking, it is noteworthy how closely the overall comparison of both players aligns in terms of frame weightings. Despite some nuanced differences, there is no singular instance of overall framing categories that could be discerned. This observation is further expressed by the Sankey diagram (Appendix I), illustrating the nearly identical distribution of categories between both outlets. This finding necessitates contextualization with respect to David Attenborough's role as narrator in all examined Netflix and BBC documentaries. Considering his significant influence on script and personal role involving the need for deeper examination (Richards, 2023, para. 4). Planet Earth III, as the newest title of the sample in late 2023, shows the most dominant critical investigation of assigning governmental responsibility to environmental hazards. Far more than half of the found governmental responsibility frames could be found in Planet Earth III. This is culminating in the last episode and a clear narrative advocating energy transition, blaming political impact on climate conferences and lastly the environmental influence of elections: "The more environment becomes an election issue, there will be more action on climate."

4.6 Frame unit interrelations and overall contribution to framing

Following the presentation of the main frames and their sub-categories, the last section will conduct an integrated analysis to present the contribution of singular frame units to the overall framing of documentaries. From a macro perspective, the frame of Morality/Ethics often appears alongside the frame of Ecological Consequences, suggesting a thematic interrelation. Many titles identify and illustrate hazards through various examples, such as "the albatross colony here is in trouble" or "all the industrial chemicals that have drained into the ocean (…) form a potentially toxic soup" in Blue Planet II. Morality/Ethics framing complementary addresses questions regarding humanity's role and growth on the planet, as illustrated by "Whether we choose to create a home for others too, is up to us" in Planet Earth II.

A similar thematic relation can be drawn to the frames of Examples of Hope and Need for Individual Change, which are employed to complement other frames presenting an ecological crisis in a critical manner throughout the script. These frames may serve as narrative tools to maintain a balanced narrative, helping to avoid a purely dystopian portrayal and engage viewers by constructive messages. Given the significant societal role of documentaries (Males & Aelst, 2021, p. 40), the content not only presents claims but also offers solutions. For instance, in Our Planet II, the narrative proposes solutions to wildlife

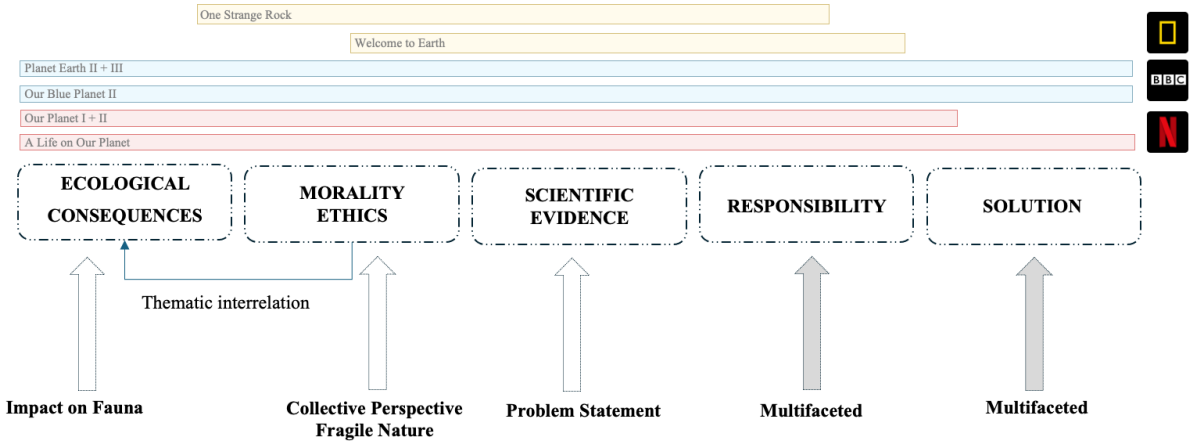
problems caused by forced migration: “For a healthy and connected planet, we must preserve the freedom to move.”

Ultimately, the research elucidated the matter how the emergence of sub-categories shapes the overall respective framing categories. The frequent discussion and subsequent listing of the Impact on Fauna sub-category emphasized its prominence within the frame of Ecological Consequences, underscoring the documentaries’ adherence to guidelines in presenting wildlife threats. Similarly, the frame of Scientific Evidence is characterized by a focus on concise Problem Definition supported by relevant scientific backing. The Responsibility framing encompasses several equally emphasized sub-categories, highlighting the attribution of accountability to all stakeholders to the environment. The Ethics/Morality frame is shaped through conveying a Collective Perspective and the Acknowledgement of Fragile Nature.

The visualization below further clarifies the impact of sub-categories on the main frames. Additionally, the range of frames employed across different documentaries is visualized, highlighting a broad and similar framing approach by BBC and Netflix productions. In contrast, National Geographic titles tend to adopt a more narrowed focus, predominantly centered around Morality and Responsibility framing. Frames related to Economic Consequences and Public Health were excluded from the visualization due to their minimal presence and thus limited relevance in the data.

Figure 3

Own visualization of frame contributions within sub-categories and documentaries



5. CONCLUSION & DISCUSSION

The previous chapter explored how environmental threats were framed in the selected set of international nature documentaries. In particular, a collection of three main frames, two complementary frames, two data emerged frames, as well as the varying portrayal in between production outlets, was presented. The following chapter will answer the overarching research question and discuss major findings in the context of current sociopolitical developments. Further, academic, and societal implications of this research will be discussed, while having a critical view on limitations. Ultimately a future research advice is given.

5.1 Research question response

To conclude, this research aimed to understand documentary drawn frames occurring within different documentary series and films in further connection to their societal impact. In specific stated through the research question: *How are environmental threats framed among the narrative of international nature documentaries?*

Environmental threats are primarily framed through the lens of Ecological Consequences, appearing as the most dominant category and accounting for 27.6% of the framing units. Morality/Ethics framing appeared likewise significant, employing a Collective Perspective to emphasize humanities shared responsibility. Overall, the research could verify and extract seven different main frames from the data in connection to environmental threats: S*cientific Evidence, Ecologic Consequences, Responsibility, Morality/Ethics, Solution and Examples of Hope.* In one sentence, the hazards are framed throughout an ecological impact perspective, balanced by a vast moral imperative connected to the human role in the ecosystem. By largely excluding considerations of Economic Consequences or Public Health, the framing of environmental threats separates the human made issue from the human experienced consequences on first level. The analysis revealed that framing ecological hazards served as a guiding framework throughout the research, demonstrating variations in intensity across different documentary titles. Some, as A Life on Our Planet, emphasizing responsibility to humanity and ecological consequences, while others, as Welcome to Earth, are largely focused on escapism and appreciating nature.

Nature threats were defined in previous literature as human activities inducing pollution, deforestation, resource overuse and habitat destruction, which lead to harm biodiversity and ecosystems (Fransson & Gärling, 1999, p. 369; WWF, 2024, para. 2). Rather than having an in-depth view of particular hazards, the documentaries addressed issues multi-categorical.

Teasing several problems by employing several frames to exert a balance, from problem statement to solution offering and potentially inspire the viewership.

5.2 Discussion of findings

Documentaries as catalysts of scientific progress

Revisiting the introductory example of Seaspiracy, one of the documentaries central issues was framing environmental threats, particularly fish consumption, as a consumer issue. Both, marine conservationist Prof. Callum Robberts and the producers themselves would assert in the Guardian the film distances from the attempt to represent scientific consensus (McVeigh, 2021, paras. 17-25). Although existing research critically questions this assertion (Gouyon, 2016, p. 26; Jeffries, 2003, p. 533), it nonetheless presents an intriguing proposition regarding the scientific interrelation with nature films. Further, the freely available YouTube content of Our Planet underscores its educational value for teachers. If documentaries actively engage in global discourse by informing, asserting, and accusing, they enter a scientific domain; however, their scientific rigor must be substantiated. This scientific accuracy (Bousé, 1998, p. 134) needs to build on open collaboration between filmmakers and scientific institutes, while upholding principles of freedom of speech. The latter might be scrutinized, particularly for productions outside of transatlantic liberal states. Most important for scientific contribution will be the willingness for altruistic transformation, detached from economic profit-driven considerations, such as box numbers and user retention analysis.

Ultimately, it becomes evident through the number of nature documentaries as well as their framed critical narrative, they increasingly contribute to the co-production of knowledge and perform “scientific authority” (Jeffries, 2003, p. 533). As Gouyon (2016, p. 27) concludes, visual imagery not only reflects but also contributes to changes in culture, which will be a reasoning to explain producing teams ambitions not only with economic success. Documentaries show confidence in attributing blame to nature’s stakeholders, while they are aiding research by integrating scientists into their teams, accessing remote locations and capturing previously unseen animal behaviors. Lastly, this scientific role is likewise expressed in international cooperation’s, exemplified by Planet Earth III being coproduced by ZDF (Germany), BBC America (United States) or NHK (Japan). This will ensure to combine scientific knowledge in cross-cultural approaches and detach narratives from singular nations environmental agendas.

Dominance of ecology overshadows public health and economic framing

Referring to the Impact of Fauna, within Ecological Consequences framing, it becomes evident documentaries aim to foster viewer empathy towards wildlife. This is intended to raise awareness about alarming developments in animal migration patterns or species population. Another content-driven approach involves showcasing human light or sound pollution: broadening viewers' perspectives to recognize environmental issues that are more complex than the well-known aim of plastic reduction. Given different objectives of documentary films, the depiction of wildlife helps viewers to easily empathize with narratives and get climate change's impact visualized. In addition to ideological ambitions of producers, series funding is suggested to influence expected narratives among stakeholders, exemplified by involvement of NGOs. In the example of Netflix' Our Planet, WWF provides access to remote locations as main cooperation partner. In return it is assumed the organization expects the majority of film content representing discussed wildlife in crucial regions aligned with current NGO projects. Since Planet Earth III is primarily funded through the BBC as likewise discussed by Jones et al. (2019, p. 421), the documentary as cultural product is likely to be subject to stringent compliance with broadcasting standards and educational guidelines.

Notably, there is a significant lack of awareness regarding vegetation and the ecological vulnerabilities, as indicated in the findings. This suggests that despite their pivotal role (Pepper, 1984, p. 82), these ecological impacts may resonate less with viewers and consequently decrease the documentaries overall impact. Regarding the absence of Economic Consequence Framing: documentaries predominantly overlook economic implications such as climate migration, food shortages, and increased taxes for climate measures. Integrating these issues into wildlife narratives may diverge from conservationist perspectives and lead to confusion in public perception. Similar reasons might apply for the lack of Public Health framing. Both, economic and public health perspective require a nuanced and multidisciplinary approach. This complexity can be challenging to convey in a visually engaging and easily digestible format. Considering not all viewers engage with nature content for educational purposes, but instead to cope with anxiety, stress, fear or simply to experience moments of happiness.

Clear responsibility framing preventing fatalism

Documentaries appear to strive for a balance of responsibility attribution among governmental, economical, and individual stakeholders of nature. However, individual responsibility is rarely and cautiously emphasized, as exemplified by advocating a plant-based

diet in A Life on Our Planet. This may be explained by socio-psychological factors at play. European green movements (e.g. Fridays for Future) or organizations (e.g. Greenpeace) already combating the rise of conservative perspectives in the aftermath of the COVID crisis. Citizens often express feelings of disempowerment, such as for speed limits, circular product packaging or overall recycling guidelines. Due to this underlying skepticism towards environmental regulation at the micro level, documentaries may apply broader critics towards industry, government, and humanity. From a content perspective critiquing individual responsibility represents a delicate line, given the objective to maintain viewer engagement (Greenfield, 2020, para. 4).

In contrast to the attribution of responsibility, previous research has shown the presence of fatalism in environmental communication (Lewthwaite, 1966, p. 22; Campbell, 2014, p. 64). This research exemplifies only a few limited frames of fatalism, best illustrated in Welcome to Earth depicting a volcano explosion caused by "something bigger than us". Volcano explosions are inherently challenging to attribute to human activities; nevertheless, fatalism emerges as a crucial ideological thread to conservation. Neutral or even publicly funded documentaries are expected to act very careful around employing fatalistic framing. Current socio-political movements endanger the legitimacy of scientifically backed climate directions, exemplified by Donald Trump and his supporters, or the persistent rise of the political party AFD in Germany 2024. Another example is given with Brazil's former president Jair Bolsonaro, showcasing singular politicians or whole social moments would evade from the responsibility of climate change by claiming disastrous phenomenon's as repeatably occurring millennia cycles.

Morality framing is advocating more nuanced human-nature understanding

In their narratives, the documentaries foster a developed perspective, recognizing the equal importance of wildlife and humanity. This aims to understand ourselves as a species within a larger system, yet acknowledging humanities significant influence. As similarly stated in A Life on Our Planet, transforming whales from a source of resources to personalities. A similar perspective was taken by Monbiot (2021) to "treat fish not as seafood but as wildlife" (para. 13). Regarding the sub-categories of Collective Perspective, similar to Fragile Nature Acknowledgement, the emphasis lies in fostering a connection between humans and earth. This approach potentially evokes feelings of guilt as stylistic method to enhance engagement. This aligns with Davis (1995, p. 286-287), who underscores the significant impact of framing the own generation elevating a sense of responsibility.

In addition, the framing of Examples of Hope is likely used as a method achieving narrational balance and introduce an emotional, optimistic subject to the viewers. User retention could be the key factor here. For both frames, Morality/Ethics and Examples of hope, it is difficult to determine the ultimate reasoning. However, it becomes evident through background materials such as behind the scenes and newspaper interviews, that conservationist ideological convictions have a major influence. Nature activism involves a mass movement, exemplified by Fridays for Future and a general awareness increase after the COVID pandemic. Documentary narratives can and should be seen as tools to build upon these postures within audiences.

Solution frame as necessity or imposition

For the framing of Solution, several reasons can be identified for its prevalent use in the selected nature films. Is it to refrain from accusing economic parties without proposing own feasible actions, thereby avoiding false balance? Is it to balance narratives, fostering hope for individual change driven by altruistic motives? According to Entman (1993, p. 65), treatment recommendation counts among others to the dominant readings of audiences. While this aligns with Davis (1995, p. 287), stating frames expecting more engagement ("giving more") result in less supportive action compared to framing expecting "taking less". The investigated documentaries predominantly frame the concept of higher action: more conservation efforts, more community engagement, more rewilding initiatives and more regulatory measures. Examples of reduced impact would include reducing fossil fuel usage (ironically accompanies with increased use of renewable energy resources) and decreasing meat consumption. The reduction of plastic consumption is likely not emphasized due to its potential to evoke emotional frustration, often viewed as governmental rather than a consumer problem initially. Moreover, it is noteworthy, documentaries leverage their cross-media presence by including websites, book versions or offline events. This empowers an ecosystem of change with pushing action (Hofman & Hughes, 2018, p. 524) in contrast to only enjoy nature content in a laid-back position. Yet, there is still limited presentation of the Solution frame, constrained by content runtime and a continued focus on inspiring awe in the wonders of life.

Production outlet: limited influence on narrative direction

Given the observable differences between the three production outlets (Appendix F), the central inquiry pertains its underlying causes. Here, it is crucial to discuss the analogous framing structure observed in both outlets BBC and Netflix (Appendix I), illustrating their

commitment to nature conservation. The consistency in framing application may be attributed to the influence of narrator Sir David Attenborough, whose mission clearly could shape the content (Richards, 2023, para. 4). National Geographic in contrast stood out with more escapist storylines, less frame units and omitting the Solution frame. This should not be seen as representative for all in house productions but sparks potential to further investigate. Still, the documentary film Before the Flood directed by Leonardo DiCaprio, clearly emphasizes a different approach. The film uniquely directs accusations towards governmental and economic parties but lacks substantial portrayal of wildlife, making it difficult to categorize within the nature documentary genre. National Geographic exhibits expertise in celebrating exploration and discovery, broadening horizons rather than warning of environmental hazards. As being acquired by the Walt Disney Company, economic interests may prioritize exiting partnerships and escapist narratives over world doom portrayals. This can be seen in their family nature documentaries Penguins or Dolphins, entirely lacking a critical view.

BBC navigating the restrictions as publicly funded educational content was already addressed. Based on this research it is difficult to argue for a comparably more drastic framing of nature threats within streaming services, as suggested through economic pressure (Jones et al., 2019, p. 421). Still, Netflix profited from global distribution in more than hundred countries simultaneously and created its own landing page *ourplanet.com*. Lastly it is also expected to exert substantial impact which persons are involved in the production process of visual content. Blue Planet II, Blue Planet III, Our Planet, Welcome to Earth and One Strange Rock all represent varying film directors which logically influences narrative directions. Remarkably, Our Planet director Alastair Fothergill criticized Blue Planet II for its perceived lack of presenting nature threats (Singh, 2019, para. 12). However, this subsequent research revealed this critique to be inaccurate. Yet, it appears despite their impactful nature activism, directors cannot entirely escape a sense of prestige.

Role of documentaries balancing entertainment vs education

As cultural product, the complexity of documentaries presentation has to be appreciated (Louson, 2018, p. 34). The question to discuss now revolves around whether is socially acceptable to depict historical representations of nature without incorporating a critical narrative addressing human impact. Previous research suggests negative portrayals would outweigh positives ones in their effect on audiences (Morton et al., 2011, p. 108; Vreese et al., 2011, p. 195). Therefore, could the objective be to attract viewers rather than advocate for social responsibility? It is imperative to consider the connection between viewing nature

content and fostering pro-environmental attitudes (Janpol & Dilts, 2016, p. 95; Arendt & Matthes, 2016, p. 468). Most realistically, both documentary forms, blue-chip and critical ones, will exist in the future, yet the distinctions may become increasingly blurred.

In conclusion, the form of documentary communication may also be compared to politics, as both are shaped significantly by their dependence on audience perception or voter sentiment. Creative film content offers an opportunity to present more critical narratives than politicians, still with their primary risks financial backing and viewer statistics in the streaming era. For politicians, particularly those in green parties in Europe, often aim to communicate crucial ecological consequences effectively. However, they also maintain a strategic distance to avoid overwhelming mainstream voters to maintain their positions in influence. The question arises if documentaries likewise stay distant in the future.

5.3 Implications of research

In terms of academic implications, this research confirms prior outlines regarding framing theory (Semetko & Valkenburg, 2000, p. 95; Badullovic et al., 2020, p. 2). Despite this, the categorization by Lewthwaite (1966, p. 22), differentiating environmental determinism and the environmentalist concept, still proves to be of crucial relevance. While film content can only depict one point of view, it likely displays an ideological representation of conservationist subjects. Likewise, the findings directly appeal to individuals' morality and are connected to economic choices (such as individuals diet or travelling), as well as political considerations (such as voting). This suggests the ongoing relevance of the connection between pro-environmental attitudes and documentary content, which already has been investigated but still lacks sufficiently broad perspectives. Therefore, this research sets the groundwork for upcoming studies, by highlighting and discussing frequently used frames or the thorough examination of relevant documentary producers and titles. As a direct contribution to academia, this research proves the relevance of previous framing outlines in the relatively underexplored domain of documentaries. Similarly, it highlights the importance of the newly emerged frame Examples of Hope and identifies a distinct sub-categorization within the broad framing matrix.

As societal implication, both producers and audiences should increasingly recognize the role of film and documentaries within the mainstream. This research frequently hinted the disrupting global significance of streaming platforms, which presents new opportunities and risks, depending on their still uncertain societal impact. As a positive example of documentaries' authority, Planet Earth III explicitly advocates for green voting and appeals to

the recognition of governmental responsibility. Producers' task is now to determine whether this approach effectively engages viewers in environmental action. Therefore, three pieces of advice for filmmakers are derived. First, producers should elaborate the differentiation of blue-chip and nature threat portrayal movies. Additionally, it may be beneficial to explore new formats, such as fully solution-framed documentaries. User reception is likely to indicate social perceptions when leveraging the data potential of streaming services (e.g. identifying which episodes resonate the most, which sequences are frequently revisited, and which prompt users to exit the content). Secondly, filmmakers should exercise greater caution with fatalistic narrative introductions, which are becoming more prevalent within society to argue for a non-human based climate change. If (as artistic decision) critical narratives are not applied, while depicting natural phenomena, it may be advantageous to include additional sources such as social media pages, QR codes or freely available printed flyers. Lastly, invoke filmmakers to find substantial answers about the societal scope and extent of their product, exemplary by research on the content itself. BBC has already made efforts in this direction by exploring the emotional impact of watching their Planet Earth II content (Keltner et al., 2017, p. 1).

5.4 Limitations

In terms of this research's limitations, it is important to acknowledge its qualitative nature rather than quantitative, thereby restricting the ability to generalize findings across vast nature content. Although the sample size was selected to effectively represent and validate previously identified frames, the study employs a purposive sampling focusing on a small documentary set suitable for this investigation. While careful consideration was given to select first and last episodes, the lack of presenting entire series could introduce bias. As outlined, the qualitative research focused on analyzing scripts, therefore the role of visual elements was not considered within the coding procedure. To mitigate this limitation, all analyzed episodes were screened in advance to provide appropriate context for the applied frames. Finally, it should be noted this research predominantly reflects a transatlantic Western European and American viewpoint. For more comprehensive understanding, perspectives from regions such as Africa or Asia should be considered to explore how different moral or ethical compasses could influence narrative framing.

5.5 Future research advice

Regarding future research, it is suggested to focus primarily on extending the above presented study, as well as quantitative methods to transfer addressed nature framing effects within society. Qualitatively, expanding the sample globally to include titles from non-EU or US regions could provide deeper understanding. For instance, this could involve productions from Asian entities such as NHK (Japan) or CCTV-9 (China).

Furthermore, a longitudinal analysis could investigate the development of documentary narratives over time. This could be enhanced by amplified by comparing entire series like Planet Earth (2006), Planet Earth II (2016) and Planet Earth III (2023). Additionally, it will be crucial to examine how narratives in wildlife-focused documentaries differ from those in socioeconomically critical titles. This could include Before the Flood and Wild Life, which were assessed in advance to the research but excluded due to lacking direct comparability. As outlined by Elo and Kyangäs (2008, p. 111), “the researcher wished to retest existing data in a new context”.

Quantitatively analyzing framing effects warrants further investigation for more comprehensive views. An intriguing approach could involve assessing which presentation formats have greater impacts on audiences: distinguishing between reception categories such as well-being, increased topical awareness and prompted activism and action. Additionally, exploring whether separating content perspectives, escapist wildlife portrayals versus critical narratives opposing power, could provide valuable insights.

REFERENCES

Aitchison, J., Aitchiso, R., & Devas, F. (2021). Assessing the environmental impacts of wildlife television programmes. *People and Nature, 3*(6), 1138-1146. https://doi.org/10.1002/pan3.10251

Arendt, F., & Matthes, J. (2016). Nature documentaries, connectedness to nature, and pro-environmental behavior. *Environmental Communication, 10*(4), 453-472. https://doi.org/10.1080/17524032.2014.993415

Badullovich, N., Grant, W. J., & Colvin, R. M. (2020). Framing climate change for effective communication: A systematic map. *Environmental Research Letters, 15*(12) https://doi.org/10.1088/1748-9326/aba4c7

Barbas, T. A., Paraskevopoulos, S., & Stamou, A. G. (2009). The effect of nature documentaries on students' environmental sensitivity: A case study. *Learning, Media and Technology, 34*(1), 61-69. https://doi.org/10.1080/17439880902759943

BBC. *Planet earth III reaches 10.6 million viewers.* (2023). BBC. Retrieved June 15, 2024, from https://www.bbc.com/mediacentre/2023/planet-earth-iii-reaches-10-6-million-viewers#:~:text=Planet%20Earth%20III%20reaches%2010.6%20million%20viewers

Benedictus, L. (2016). Planet earth II and the bloodthirsty evolution of the nature documentary. *The Guardian* https://www.theguardian.com/tv-and-radio/2016/nov/01/planet-earth-ii-david-attenborough-bloodthirsty-evolution-of-the-nature-documentary

Bianchi, T. (2023). *Most popular environmental documentary films worldwide from january 2020 to february 2023, based on average monthly search volume.* Statista. Retrieved June 15, 2024, from https://www.statista.com/statistics/1388258/top-environmental-documentaries-by-monthly-searches/

Boissat, L., Thomas-Walters, L., & Verissimo, D. (2021). Nature documentaries as catalysts for change: Mapping out the 'Blackfish effect'. *People and Nature, 3*(6), 1179-1192. https://doi.org/https://doi.org/10.1002/pan3.10221

Bousé, D. (1998). Are wildlife films really "nature documentaries"? *Critical Studies in Mass Communication, 15*(2), 116-140. https://doi.org/10.1080/15295039809367038

Brennen, B. (2017). *Qualitative research methods for media studies*. Routledge. https://doi.org/10.4324/9781315435978

Campbell, V. (2014). Framing environmental risks and natural disasters in factual entertainment television. *Environmental Communication, 8*(1), 58-74. https://doi.org/10.1080/17524032.2013.848222

Cutter, S. L. (1996). Vulnerability to environmental hazards. *Progress in Human Geography, 20*(4), 529-539. https://doi.org/10.1177/030913259602000407

Davis, J. J. (1995). The effects of message framing on response to environmental communications. *Journalism & Mass Communication Quarterly, 72*(2), 285-299. https://doi.org/10.1177/107769909507200203

Doyle, G. (2013). *Understanding media economics*. SAGE Publications Ltd. https://doi.org/10.4135/9781446279960

Dunn, M. E., Mills, M., & Verissimo, D. (2020). Evaluating the impact of the documentary series blue planet II on viewers' plastic consumption behaviors. *Conservation Science and Practice, 2*(10) https://doi.org/10.1111/csp2.280

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51-58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x

Entman, R., Matthes, J., & Pellicano, L. (2009). Nature, sources, and effects of news framing. *The handbook of journalism studies* (pp. 175-190). Routledge. https://doi.org/10.5167/uzh-26408

Fernández-Bellon, D., & Kane, A. (2020). Natural history films raise species awareness-A big data approach. *Conservation Letters, 13*(1) https://doi.org/10.1111/conl.12678

Fransson, N., & Gärling, T. (1999). Environmental concern: Conceptual definitions, measurement methods, and research findings. *Journal of Environmental Psychology, 19*(4), 369-382. https://doi.org/10.1006/jevp.1999.0141

Freytag, A., & Possler, D. (2024). How dual-message nature documentaries that portray nature as amazing and threatened affect entertainment experiences and pro-environmental intentions. *Journal of Communication,* , 1-15. https://doi.org/10.1093/joc/jqad044

Gell, F. (2019, *The blue planet effect: The plastics revolution is just the start.* The Guardian. Retrieved Feb 05, 2024, from https://www.theguardian.com/commentisfree/2019/mar/25/plastics-revolution-marine-life

Goffmann, E. (1974). *Frame analysis: An essay on the organization of experience.* Harvard University Press.

Gouyon, J. (2016). Science and film-making. *Public Understanding of Science, 25*(1), 17-30. https://doi.org/10.1177/0963662515593841

Greenfield, P. (2020). *Don't look away now: Are viewers finally ready for the truth about nature?* The Guardian. Retrieved Nov 02, 2024, from https://www.theguardian.com/environment/2020/sep/18/dont-look-away-now-are-viewers-finally-ready-for-the-truth-about-nature-aoe

Hall, S. (1997). The work of representation. *The work of representation* (pp. 13-58). Sage.

Hassenger, J. (2023). *What can we learn from netflix's biggest viewership data reveal ever?* The Guardian. Retrieved 04 June, 2024, from https://www.theguardian.com/culture/2023/dec/13/top-watched-shows-netflix-data

Haynes, K. (2012). Reflexivity in qualitative methods. I. *Qualitative organizational research: Core methods and current challenges* (pp. 72-89). SAGE Publications. https://doi.org/10.4135/9781526435620.n5

Hynes, S., Ankamah-Yeboah, I., O'Neill, S., Needham, K., Xuan, B. B., & Armstrong, C. (2021). The impact of nature documentaries on public environmental preferences and willingness to pay: Entropy balancing and the blue planet II effect. *Journal of Environmental Planning and Management, 64*(8), 1428-1456. https://doi.org/10.1080/09640568.2020.1828840

Hofman, K., & Hughes, K. (2018). Protecting the great barrier reef: Analysing the impact of a conservation documentary and post-viewing strategies on long-term conservation behaviour. *Environmental Education Research, 24*(4), 521-536. https://doi.org/10.1080/13504622.2017.1303820

Janpol, H. L., & Dilts, R. (2016). Does viewing documentary films affect environmental perceptions and behaviors? *Applied Environmental Education & Communication, 15*(1), 90-98. https://doi.org/10.1080/1533015X.2016.1142197

Lewthwaite, G. (1966). Environmentalism and determinism: A search for clarification. *Annals of the Association of American Geographers, 56*(1), 1-23. https://doi.org/10.1111/j.1467-8306.1966.tb00540.x

Louson, E. (2018). Taking spectacle seriously: Wildlife film and the legacy of natural history display. *Science in Context, 31*(1), 15-38. https://doi.org/10.1017/S0269889718000030

Jeffries, M. (2003). BBC natural history versus science paradigms. *Science as Culture, 12*(4), 527-545. https://doi.org/10.1080/0950543032000150346

Jones, J. P. G., Thomas-Walters, L., Rust, N. A., & Verissimo, D. (2019). Nature documentaries and saving nature: Reflections on the new netflix series our planet. *People and Nature, 1*(4), 420-425. https://doi.org/10.1002/pan3.10052

Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist, 39*(4), 341-350. https://doi.org/10.1037/0003-066X.39.4.341

Kellehear, A. (1993). *The unobtrusive researcher: A guide to methods*. Routledge.

Keltner, D., Bowman, R., & Richards, H. (2017). *Exploring the emotional state of 'Real happiness'. A study into the effects of watching natural history television content.* California: BBC Worldwide Global Insight Team. https://cms.bbcearth.com/sites/default/files/2022-04/bbcw-real-happiness-white-paper-final-v2-58ac1df7_2.pdf

Lakoff, G. (2010). Why it matters how we frame the environment. *Environmental Communication, 4*(1), 70-81. https://doi.org/10.1080/17524030903529749

Lordache, C., & Raats, T. (2022). The netflix original documentary, explained: Global investment patterns in documentary films and series. *Studies in Documentary Film, 17*(2), 151-171. https://doi.org/10.1080/17503280.2022.2109099

Lyster, R. (2023). *The BBC's 'Planet earth' used to be supremely soothing. now it gives me nightmares.* Financial Times. Retrieved Feb 02, 2024, from https://www.ft.com/content/68022f64-53e4-4417-9f23-8c9d318162cd

Males, J., & Van Aelst, P. (2021). Did the blue planet set the agenda for plastic pollution? an explorative study on the influence of a documentary on the public, media and political agendas. *Environmental Communication, 15*(1), 40-54. https://doi.org/10.1080/17524032.2020.1780458

Matthes, J. (2009). What's in a frame? A content analysis of media framing studies in the world's leading communication journals, 1990-2005. *Journalism & Mass Communication, 86*(2), 349-367. https://doi.org/10.1177/10776990090860020

Matthes, J., & Kohring, M. (2008). The content analysis of media frames: Toward improving reliability and validity. *Journal of Communication, 58*(2), 258-279. https://doi.org/10.1111/j.1460-2466.2008.00384.x

McLuhan, M. (1994). The medium is the message. *Understanding media. the extensions of man* (pp. 1-18). McGraw-Hill.

McVeigh, K. (2021), *Seaspiracy: Netflix documentary accused of misrepresentation by participants.* The Guardian. Retrieved 04 June, 2024, from https://www.theguardian.com/environment/2021/mar/31/seaspiracy-netflix-documentary-accused-of-misrepresentation-by-participants

Monbiot, G. (2021). *Seaspiracy shows why we must treat fish not as seafood, but as wildlife.* The Guardian. Retrieved June 15, 2024, from https://www.theguardian.com/commentisfree/2021/apr/07/seaspiracy-earth-oceans-destruction-industrial-fishing

Morton, T. A., Rabinovich, A., Marshall, D., & Bretschneider, P. (2011). The future that may (or may not) come: How framing changes responses to uncertainty in climate change communications. *Global Environmental Change, 21*(1), 103-109. https://doi.org/10.1016/j.gloenvcha.2010.09.013

MSC. *Our seaspiracy response.* (2021). MSC. Retrieved June 15, 2024, from https://www.msc.org/media-centre/news-opinion/news/2021/03/26/response-to-netflix-seaspiracy-film

Netflix. *Responding to teachers' requests for access to documentaries.* (2020). Netflix. Retrieved June 15, 2024, from https://about.netflix.com/en/news/free-educational-documentaries

Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches*. Pearson.

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(4), 1189-1208.

Pauly, D. (2021). *What netflix's seaspiracy gets wrong about fishing, explained by a marine biologist.* Vox. Retrieved June 15, 2024, from https://www.vox.com/2021/4/13/22380637/seaspiracy-netflix-fact-check-fishing-ocean-plastic-veganism-vegetarianism

Pepper, J. D. (1984). *Roots of modern environmentalism*. Routledge.

Pietilä, A., Nurmi, S., & Kings, H. (2019). Qualitative research: Ethical considerations. *The application of content analysis in nursing science research* (pp. 49-69). Springer.

Rabiger, M. (2015). *Directing the documentary*. Focal Press. https://doi.org/10.4324/9781315867502

Reese, S. D. (2001). *Framing public life*. Routledge. https://doi.org/10.4324/9781410605689

Richards, A. (2023). *What it's like to work with sir david attenborough.* Tudum, by Netflix. Retrieved Jun, 03, 2024, from https://www.netflix.com/tudum/articles/working-with-david-attenborough-our-planet-2

Rosteck, T., & Frentz, T. S. (2009). Myth and multiple readings in environmental rhetoric: The case of an inconvenient truth. *Quarterly Journal of Speech, 95*(1), 1-19. https://doi.org/10.1080/00335630802621086

Schreier, M. (2013). Qualitative content analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 170-183). SAGE. https://doi.org/10.4135/9781446282243

Semetko, H., & Valkenburg, P. (2000). Framing european politics: A content analysis of press and television news. *Journal of Communication, 50*(2), 93-109. https://doi.org/10.1111/j.1460-2466.2000.tb02843.x

Shukman, D. (2019). *Attenborough: World 'changing habits' on plastic.* BBC. Retrieved 04 June, 2024, from https://www.bbc.com/news/science-environment-50419922

Singh, A. (2019). *Netflix series our planet 'will reach one billion people in a way the BBC cannot match.* The Telegraph. Retrieved June 15, 2024, from https://www.telegraph.co.uk/news/2019/04/01/netflix-series-planet-will-reach-one-billion-people-way-bbc/

Sullivan, S. (2016). Beyond the money shot; or how framing nature matters? locating green at wildscreen. *Environmental Communication, 10*(6), 749-762. https://doi.org/10.1080/17524032.2016.1221839

Tabernero, C. (2018). The changing nature of modernization discourses in documentary films. *Science in Context, 31*(1), 61-83. https://doi.org/10.1017/S0269889718000066

Top 250 TV series. IMDB. Retrieved Feb 02, 2024, from https://www.imdbimdb.com/chart/toptv/

Van Gorp, B. (2005). Where is the frame?: Victims and intruders in the belgian press coverage of the asylum issue. *European Journal of Communication, 20*(4), 485-508. https://doi.org/10.1177/0267323105058253

Van Gorp, B. (2010). Strategies to take subjectivity out of framing analysis. In P. D'Angelo, & J. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp. 84-109). Routledge.

Vasterman, P., Yzermans, J., & Dirkzwager, A. (2005). The role of the media and media hypes in the aftermath of disasters. *Epidemiologic Reviews, 27*(1), 107-114. https://doi.org/10.1093/epirev/mxi002

Vreese, C. H. d., Boomgaarden, H. G., & Semetko, H. A. (2011). (In)direct framing effects: The effects of news media framing on public support for turkish membership in the european union. *Communication Research, 38*(2), 179-205. https://doi.org/10.1177/0093650210384934

WWF. *Tackling threats that impact the earth.* (2024). WWF. Retrieved 04 June, 2024, from https://www.worldwildlife.org/threats

APPENDICES

APPENDIX A – Framing Matrix after Coding Pilot

Coding table including main framing categories established in congruence with recent framing literature, as well as sub-categories derived from both data and research.

Framing Category	**Sub-Category**	**Definition**	**Example quote**
Scientific Evidence Frame	Cross-Reference to studies	Referencing existent studies within the field for making claims.	"Research is revealing, how fundamental chemistry of the ocean is changing"
	Factual Problem statement	Broad, scientifically-backed assertions about well-established problems within the natural world.	"The health of our ocean is under threat"
	Scientific authority	Joining the co-production of knowledge, while contributing to research with documentary. Code word: "the *xyz-film* team"	"For the Blue Planet II team this was their most ambitious expedition: For the first time in history, a manned submersible will try to dive to a depth of 1,000 meters."
	Lack of scientific knowledge	Hints research lacks comprehensive perspective of subject.	"They cover 70% of the surface of our planet, and yet they are still the least explored."

Economic Consequences Frame	Impact on local/global economies	Higher cost for operating in economy (fishing, breeding, carbon emissions)	"The fishermen take less than 10%. So, the balance there is that there is enough for everybody, given we manage this stock."
	Impact on urban environments	Critical developments for cities and metropolitical areas causing human migration.	"Already, cities like Miami are under threat."
Ecologic Consequences Frame	Impact on flora	Effects on plant life and vegetation caused by environmental changes.	"… all the corals were basically healthy. But, in the last few weeks, everything changed."
	Impact on fauna	Effects on animal life caused by environmental changes. Hints on species extinction.	"With all that noise, it completely changed the way how the fish were behaving."
	Geographical impact	Effect on physical structures as anthropogenic change. Including climate change and habitat destruction.	"Here in the past 30 years, the extent of the ice in summer has been reduced by 40%"
	Disaster frame	Portraying climate change as disaster depicted by signal words apocalyptic, catastrophe or a dystopian future view, just as	"We're facing a disaster, a catastrophe."

		irreversible changes in geographics or species.	
Public Health Frame	(Appearing) Diseases	Environmental impact on humanity by occurring illnesses.	"Most of the diseases were under control."
	Health Threats	Overarching human health threats due to environmental changes.	"Too much oxygen and we fry. Too little and we choke."
	Nature as inspiration	Occurrences in nature taken to improve human medicine.	"Now they are studying how it works to create powerful new painkillers."
Responsibility Frame	Jeremiad Frame	Attitudinal position holding human agency responsible. Code word: "man-made" "human activity"	"And this is man-made beyond question? Beyond question."
	Fatalistic Frame	Depicting nature as endured by people, detached from human responsibility.	"… an unpredictable weather event called El Nino raised sea temperatures to record levels."
	Governmental responsibility	Placing governmental activities or ignorance in the center of accountability.	"But we can't do it alone and we need government and big business to wake up and see what they're doing to the planet and get real."

	Economic responsibility	Placing economic activities as trade, carbon emissions or hunting in the centre of accountability.	"Every night, thousand miles lines of fishing lines, laden with hooks, are set."
	Individual or group responsibility	Placing local communities and individual behavior in the centre of accountability.	"Plastic's coming from either being dumped at sea, or also from people's homes."
Morality Frame	Collective perspective	Making use of a "we/our narrative" as – our generation	"…and it's our rubbish that's going into the oceans, and it's our problem that we need to solve."
	Animal intelligence	Acknowledgement of animal intelligence and their equality to humans.	".. is challenging our understanding of fish intelligence."
	Fragile nature acknowledgement	Endorsement of vulnerable, complex and protection indigent habitats.	"…so we begin to appreciate the fragility of their homes"
	Earth appreciation	Admiration of planet earth and its interconnected ecosystems	"And then there's wonder at the sheer power and beauty of these magnificent animals."
	Emotional sadness	Referring to emotional of narrator or actors.	"It's incredibly sad to see areas that you have dived on since you were a little kid"

Solution Frame	Governmental/economic treatments	Treatment recommendation referring to regulative state or business level.	"It will require international cooperation."
	Activist/community treatments	Treatment recommendation exemplify pro-environmental acts from individual/groups.	"Thanks to the efforts of this community, these turtles have had an extraordinary change in fortune."

APPENDIX B – Framing Matrix of newly emerged codes

Coding table including inductive data emerged frames and their sub-categories.

Framing category	Sub-Category	Definition	Example quote
Earth as Miracle	-	Depicting the environment as wonder, unknown or full of surprises.	"It's all just so wonderfully unlikely, and yet it's here."
Need for Individual Change	-	Referring to individual's worldview, traits, and the necessity for its change. Meta level, connect with nature	"And the quickest and most effective way to do that is for us to change our diet."
Examples of Hope	Evidence of functioning ecosystem	Emphasize natural processes that show healthiness	"The relative amount of oxygen in the atmosphere has been surprisingly constant."

	Evidence of human heroes	Exemplify pro-environmental acts from individual/groups	"Thanks to the efforts of this community, these turtles have had an extraordinary change in fortune."
	Political / economic developments	Exemplify pro-environmental acts from governments or businesses	"Morocco relied in imported oil and gas for almost all of its energy. – Today, it generates 40% of its needs at home."
	Recovery of ecosystems / species	Emphasize positive wildlife developments	"In the 30 years since the evacuation of Chernobyl, the wild has reclaimed the space."
Human-Nature Connectivity	-	Humans as integral part of the ecosystem. Dual two-way connection.	"It's the smell of earth, the smell of home, the smells of the natural world."

APPENDIX C – Coding results established frames

Quantity of codes applied per frame and sub-category

Framing Category	**Sub-Category**	**Number of times coded**
Scientific Evidence Frame	Cross-Reference to studies	15
	Scientific authority	17
	Factual problem definition	49
	Lack of scientific knowledge	12
Economic Consequences Frame	Impact on local/global economies	4
	Impact on urban environments	7

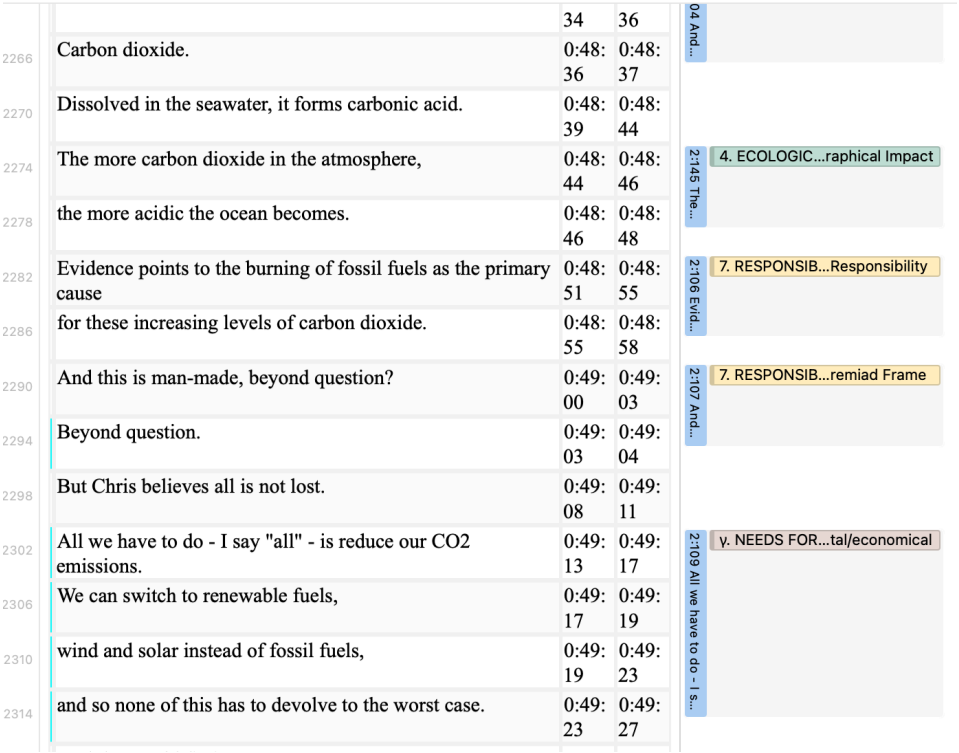
Ecologic Consequences Frame	Impact on flora	15
	Impact on fauna	104
	Geographical impact	50
	Disaster frame	38
Public Health Frame	(Appearing) Diseases	1
	Health Threats	9
	Nature as inspiration	2
Responsibility Frame	Jeremiad Frame	32
	Fatalistic Frame	37
	Governmental responsibility	22
	Economic responsibility	38
	Individual or group responsibility	13
Morality/Ethics Frame	Collective perspective	64
	Animal intelligence	11
	Fragile nature acknowledgement	61
	Earth appreciation	7
	Emotional sadness	9
Solution Frame	Activist/collective treatments	11
	Governmental/economic treatments	29

APPENDIX D – Coding results occurred frames

Quantity of codes applied per frame and sub-category

Framing category	Sub-Category	Number of times coded
Earth as Miracle	-	15
Suggestions For Change	Individual	17
	Governmental / Economical	29
Examples of Hope	Evidence of functioning ecosystem	11
	Evidence of human heroes	11
	Political / economic developments	12
	Recovery of ecosystems / species	20
Human Nature Connectivity	-	17

APPENDIX E – Atlas.ti coding procedure

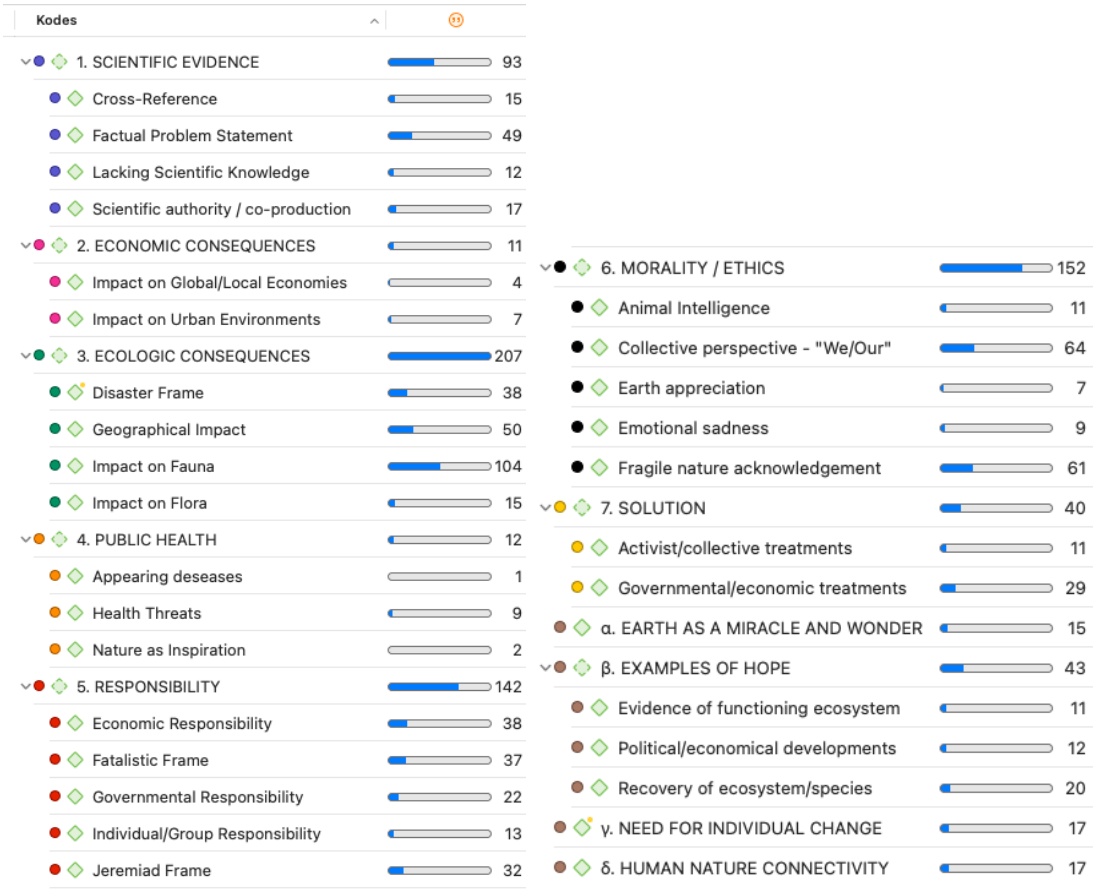


APPENDIX F – Atlas.ti code output table

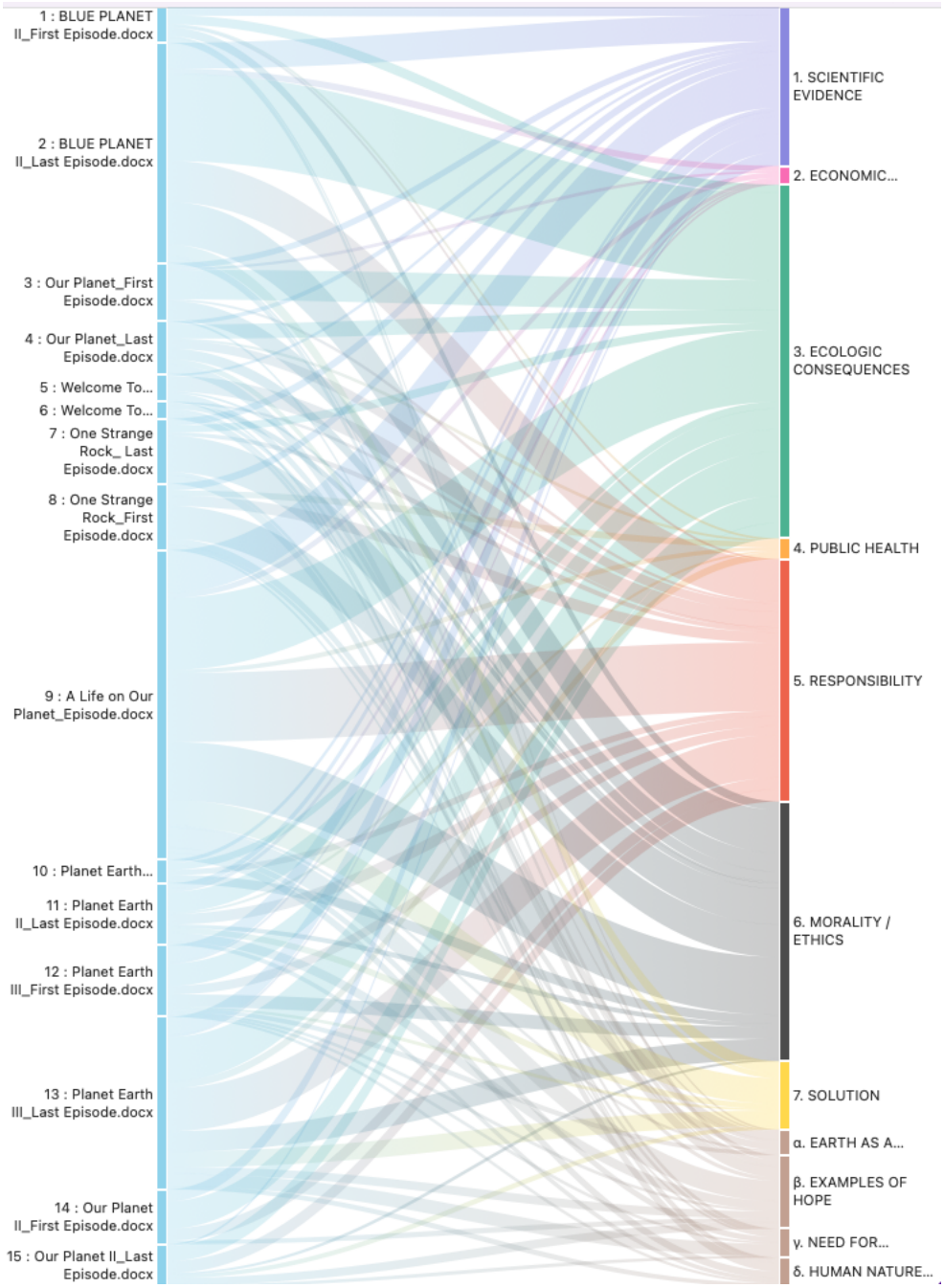
	1 BLUE PLANET I... 22	2 BLUE PLANET... 131	3 Our Planet_Fir... 34	4 Our Planet_La... 31	5 Welcome To E... 16	6 Welcome To E... 10	7 One Strange R... 39
1. SCIENTIFIC EVIDENCE 93	5	15	3	2	1		4
2. ECONOMIC CONSEQUENCES 11		3	1				
3. ECOLOGIC CONSEQUENCES 207	5	51	17	8			4
4. PUBLIC HEALTH 12	1			1			
5. RESPONSIBILITY 142	1	24	1	5	9	1	2
6. MORALITY / ETHICS 152	5	25	11	6	1	3	21
7. SOLUTION 40		7		3			
α. EARTH AS A MIRACLE AND WONDER 15	1	1			4	2	
β. EXAMPLES OF HOPE 43	3	3	1	6			
γ. NEED FOR INDIVIDUAL CHANGE 17						2	2
δ. HUMAN NATURE CONNECTIVITY 17					1	2	5
Summen	21	129	34	31	16	10	38

8 One Strange R... 40	9 A Life on Our... 184	10 Planet Earth II... 14	11 Planet Earth II... 36	12 Planet Earth II... 42	13 Planet Earth II... 101	14 Our Planet II_... 32	15 Our Planet II_... 26	Summen
4	25	2	3	10	11	7	1	93
	3		2	1	1			11
	42	4	12	13	26	16	9	207
3	2		1		4			12
6	40	3	6	5	25	7	7	142
19	34	5	2	7	12		1	152
	15		3	1	9		2	40
4	1			2				15
2	12		5	1	4	2	4	43
1	3			1	7		1	17
	4		2	1	2			17
39	181	14	36	42	101	32	25	749

APPENDIX G – Atlas.ti coding table



APPENDIX H – Atlas.ti output Sankey diagram



APPENDIX I – Atlas.ti output Sankey diagram comparison BBC Netflix