

NEVER BEFORE SEEN: SPECTACLE, STAGING, AND STORY
IN WILDLIFE FILM'S BLUE-CHIP RENAISSANCE

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Abstract

The topic of this dissertation is wildlife film and its representation of animal behaviour. I identify a blue-chip renaissance of wildlife documentary filmmaking in the early twenty-first century featuring conventional natural history subject matter, stunning visuals, unprecedented costs, an extended rhetoric of authenticity, and an emphasis on novel footage of animal behaviour. The blue-chip renaissance is a fertile site for investigating wildlife films as hybrid objects, as these films inhabit a set of major conceptual tensions between nature and culture; entertainment and education; and authenticity and artifice. In a review of extant literature (Chapter 1) I examine how those conceptual boundaries have been permeable and productive for scholars of wildlife film and related topics in multiple disciplines, motivating this dissertation's interdisciplinary approach. I argue in Chapter 2 that the blue-chip renaissance's visual spectacle is not an entertaining impediment to education, but rather a route to immersion and affective knowing, drawing from the legacy of natural history display. In Chapter 3, I analyze working filmmakers' attitudes about staging practices in wildlife documentaries, a controversial topic that influences their professional identity as storytellers and observers of nature. Chapter 4 offers a taxonomy of the representation within the blue-chip renaissance and its authoritative public demonstration of nature, arguing that these films model and simulate a variety of real and theoretical entities and processes. In Chapter 5, I show that the authenticity of the blue-chip renaissance's portrayal of nature is predicated on the extensive use of behind-the-scenes making-of documentaries employing observational realism. I conclude by exploring the challenges of locating any definitive cultural impacts of wildlife films, and offer instead directions for further research into wildlife films as experienced science communication.

Dedication

To student parents everywhere.

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Introduction

Wildlife films, both recent and historical, currently hold a prominent role in the public imagination. A pair of very different innovations demonstrates this prominence. First, in a 2017 breakthrough, neuroscientists stored the first filmed animal motion in a living animal by encoding a series of images within bacterial DNA. Seth Shipman and his collaborators effectively created the first genomic video archive. Using *E. coli*'s own CRISPR system, which stores segments of encountered viral DNA, the neuroscientists archived 5 sequential images; they were later able to retrieve the images with over 90 percent accuracy by sequencing the DNA (Shipman et al. 2017; Waltz 2017). The images they chose were from Eadweard Muybridge's now-iconic study *The Horse in Motion* (fig. 1), which was created through Muybridge's advances in motion capture photography in 1878. In their report to *Nature*, Shipman et al. describe how "we push the technical limits of this information storage system" (2017, 345) in the same way that Muybridge's motion-capture apparatus expanded the limits of filming subjects in motion and centered animal bodies within the history of film.¹

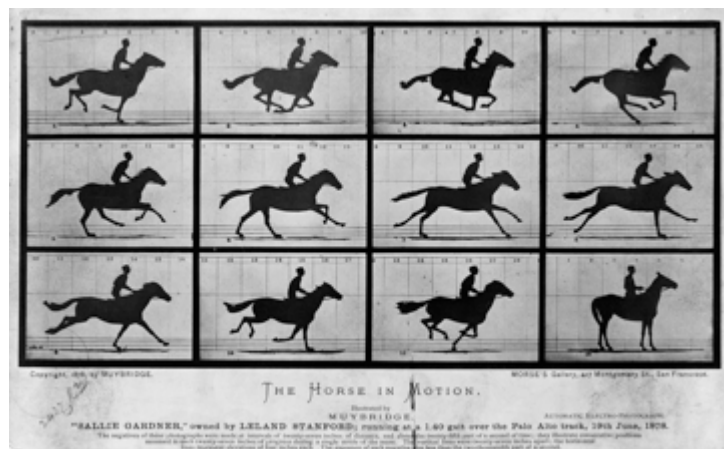


Figure 1: The Horse in Motion. Eadweard Muybridge, 1878.

¹ Biological inquiries into the motion of animals played an important role in cinema's early technical development. The first attempt to scientifically document animal motion on film began in 1872 when railroad industrialist Leland Stanford commissioned Eadward Muybridge to settle the question of whether there was a point during a horse's gallop where all four feet left the ground, with the aim of optimizing horse racing (Burt 2002). This was finally achieved in 1878 when Muybridge perfected his twelve-camera apparatus operated with automatic shutters and trip wires, showing the horse with all feet in the air (Mitman 2009, 8). Other early examples of such filmmaking include French physiologist Jules-Etienne Marey's films of the aerodynamics of bird wings in motion and of cats being dropped a short distance showing the kinematics of their twists to land on their feet (Burt 2002, 107, 110); these were achieved thanks to Marey's 1882 invention, the chrono-photographic gun, which could take twelve photographs per second and reveal physiological processes that were beyond the capability of human vision (Mitman 2009, 8). Images 2 and 3 within *Figure 1* demonstrate the airborne horse.

The second achievement in visual technology, at a thoroughly different scale, was the 2017 relaunch of Google Earth, the program offering users an explorable satellite's eye-view of the entire planet. Google Earth has partnered with BBC Earth to offer videos from their extensive library of current and historical wildlife programs embedded within specific map locations. Google describes how users can “journey to six habitats—from islands to mountains to jungles—and learn about the unique and thrilling wildlife in each” by interacting with location-specific video content (Shah 2017).² For example, by exploring in “Voyager” mode, a Google Earth user can virtually navigate to five locations in Papua New Guinea, each showing an archival BBC Natural History Unit (NHU) video of birds-of-paradise narrated by eminent natural history presenter Sir David Attenborough. Viewers can also explore film clips from the current BBC series *Planet Earth II* (2017), also narrated by Attenborough. This video content, deployed within the world's first free satellite mapping program offering outer space- to street-level views, both draws upon and adds to the BBC's long legacy of showcasing nature.

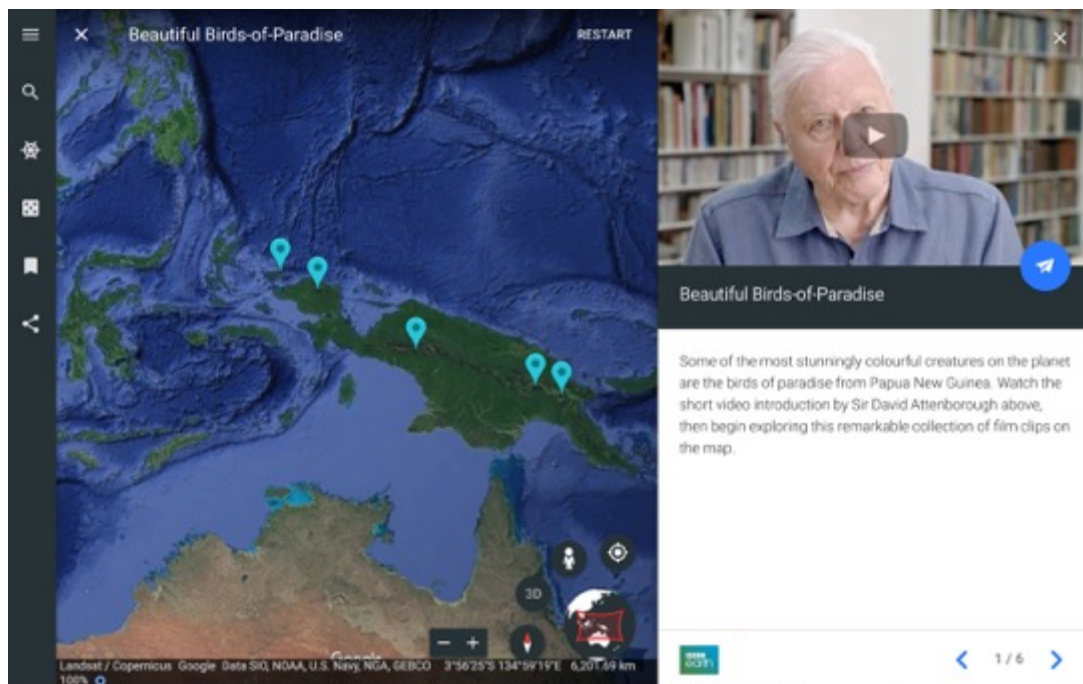


Figure 2: Screenshot of “Beautiful Birds-of-Paradise” in Voyager Mode, *Google Earth*. Map data: Landsat / Copernicus Google Data SIO, NOAA, U.S. Navy, NGA, GEBCO.

² Founded in 2009, BBC Earth is the global multiplatform brand for all of the BBC Natural History Unit's wildlife content “including DVDs, Blu-Ray, licensed consumer products, feature films, live events, a website, YouTube channel, Twitter feed, Facebook page and programming blocs on international satellite channels” (Richards 2013a, 143).

These different vignettes capture the current cultural prominence of wildlife films. The contrast between them is both spatial, in that it spans from the molecular to the planetary, and temporal, in its distillation of both wildlife filmmaking's nearly-fabled origin and its present-day status as our most prominent, authoritative source of animal footage. They each showcase cutting-edge visual technologies and methods of representation, a mastery of scale, the revelation of unknown features of animal behaviour, and what natural history film scholar Jean-Baptiste Gouyon describes as “the authority to speak for nature” (2011a, 26) granted to reputable broadcasters. This authority in particular permeates the BBC's Natural History Unit and its preeminent filmmaker Sir David Attenborough; the success of the watershed *Planet Earth* series (2006) set the stage for the prestige wildlife programming over the next decade culminating in *Planet Earth II*'s (2017) inclusion within *Google Earth*. And they each use wildlife filmmaking's historical legacy for their present-day legitimacy.

Wildlife films of the early twenty-first century, as such attention suggests, have distinctive features. They are spectacular and expensive. They are ambitious, spanning the globe in search of never-before-seen species. They cater to Western viewers' home flatscreen ownership and draw on innovative camera technologies. They also offer viewers unprecedented behind-the-scenes access to filming locations and practices through making-of documentaries that reveal wildlife films' contexts of production. Broadcasters' renewed focus on these higher production values was unexpected. In the late 20th century, a variety of pressures from the shifting media landscape and within documentary filmmaking in particular resulted in a proliferation of wildlife programs of the “reality TV” style, featuring animal attack shows, “pets & vets,” rescue animals, and human presenters, such as Steve “The Crocodile Hunter” Irwin, interacting with dangerous animals (Scott 2003; Mitman 2009; Chris 2006; Kilborn 2003; Ellis 2005).³ While some of those programs continue to be produced and broadcast, within a decade wildlife film saw a revival of the high-profile documentary production from mid-century, with enormous budgets, lavish visuals, star-studded narration, and a return of the traditional natural history documentary format.⁴ This revival fulfills all of the characteristics of the older blue-chip wildlife genre as described by Derek Bousé. These include the visual splendor of pristine nature, “charismatic” mega-fauna, an avoidance of

³ Irwin's show *Crocodile Hunter* ran on Animal Planet and the Discovery Channel from 1996 until his death in 2006.

⁴ For Davies, this format is exemplified by the BBC's NHU, whose “steady style and narratives [...] contribute a remarkably consistent genre” given the changes to broader television culture, biological science, and the environmental movement in the second half of the 20th century (1998, 15).

the topics of science, politics, or conservation, no traces of human civilization, a sense of timelessness, and dramatic or suspenseful storylines (2000, 14-15).⁵ Its attraction of enormous new audiences to natural history programming took the industry by surprise (Palmer 2010, 161). The term “blue-chip,” refers in the finance industry to a high-priced or high-value stock. It originated in nineteenth-century casino gambling where blue chips traditionally designated the highest value. Its use to describe wildlife documentary film retains the connotations of high cost, high quality programming: these films are “Expensive to make, often years in production, and gorgeous to watch” (Mitman 2009, 211). I identify this as the “blue-chip renaissance” in wildlife filmmaking, and it is the setting for my dissertation.⁶

The specific manner of representation that has proliferated within recent blue-chip wildlife films seems to maintain and extend a conceptual divide between human beings and the rest of nature. These films offer portraits of wildlife undisturbed by human activity while excluding or segregating any evidence of either the films’ technologically innovative production or human beings’ real, deleterious effects on animals and their environments.⁷ Given the unprecedented recent prominence of blue-chip wildlife films, the analysis of the modes of representation in

⁵ The adjective “charismatic” is widely used in conservation biology, environmentalism, and wildlife film scholarship to describe species with which humans are considered to sympathize most easily, based on such factors as attractiveness, reputation, ability to attract interest or sympathy, and distinctiveness. Large mammals, especially cats, elephants, bears, and primates, exemplify the charismatic mega-fauna. Smaller animals can also be charismatic; for example, the monarch butterfly’s conservation success story is largely attributed to the species’ popular appeal as a beautiful, migratory pollinator. A particular species’ charisma can be enhanced through promotional campaigns or less-deliberate cultural influences, such as killer whales’ popularity after the 1993 film *Free Willy* (Ducarme, Luque, and Courchamp 2013). Both Mooallem (2013) and Adams and Carwardine (1991) describe how charisma can determine which conservation efforts are successful at engaging public interest and support. Despite conservation biologists not holding a single, stable definition for charisma, and their having idiosyncratic understandings of how charisma relates to other species concepts (such as indicator, keystone, umbrella, and flagship species), charisma is nonetheless a key and underrated feature within biodiversity efforts (Ducarme, Luque, and Courchamp 2013).

⁶ A definitive account of this term’s usage and rise to prominence within natural history filmmaking has proved elusive. It is reputed to have originated with BBC Natural History Unit producer John Sparks (Davies 1998, 16). Sparks, whose career at the NHU began in 1965, would have witnessed the development of the blue-chip format in Britain and the competition between the BBC’s programming and Anglia TV’s *Survival* series beginning in the 1960s; Davies believes this would have coincided with the term’s migration to the film industry (Gail Davies, personal communication). Another wildlife film scholar, Gouyon, has a different assessment. Gouyon points out that the term was not widely used by natural history television practitioners before the 1990s and does not appear in their written accounts, such as Christopher Parsons’ *True to Nature: Christopher Parsons Looks Back on Twenty-Five Years of Wildlife Filming With the BBC Natural History Unit* (1982). For Gouyon, this suggests that the phrase was not common parlance for wildlife filmmakers; he suggests that the term gained traction within the industry in part due to the popularity of Bousé’s book *Wildlife Films* (2000) and is now used retrospectively to refer to earlier series (Gouyon, personal communication).

⁷ These features of blue-chip programming have been the target of criticism from both wildlife film practitioners and environmentalists. See Palmer (2010).

wildlife films' mediation between nature and viewers takes on a new urgency. But mainstream blue-chip wildlife films, especially those of the "British Style" (Bousé 1998), tend to be considered as strictly educational documentaries that are unproblematic to produce (Bullert 1997), that are meant to deliver factual content to viewers (Dingwall and Aldridge 2006) and that operate without the same capacity for natural history artifice of competing wildlife genres (Bousé 1998; Palmer 2010). Such assumptions, however, can be a misunderstanding of the blue-chip genre, overlooking both the significant role of its entertainment context as well as its specific contributions of its characteristic and prominent role in representing wildlife. I explore how blue-chip wildlife films like *Planet Earth* have come to represent nature, or at least a particular conception of nature, in the early 21st century.

I investigate the wildlife programming of the blue-chip renaissance through an exploration of the following research questions. Why did blue-chip wildlife films, previously considered to be prohibitively expensive in the late twentieth century, come to an unprecedented prominence in the first decade of the twenty-first century? How do these films come to be promoted as authoritative images of nature? How does the legacy and continued use of staging practices for generating particular animal behaviour intersect with that perceived authenticity for working filmmakers? How do these films and programs offer scientific findings and animal behaviours for public consumption? In short, how do blue-chip wildlife films represent nature, and in what contexts are those representations produced, broadcast, and experienced by viewers?

My investigation of these questions provides an original account of the role of recent blue-chip wildlife films in the construction of nature. This project will significantly contribute to the topic by supplementing the limited scholarship on wildlife films in several ways. First, I identify the blue-chip renaissance as a distinct period in wildlife filmmaking, analyze its most prominent feature, spectacle, and describe its significant historical resonance with natural history display. Next, I offer a novel empirical contribution to recent wildlife film scholarship by drawing from working wildlife and environmental filmmakers' own voices, describing how the practices and attitudes which have shaped this resurgence amount to a professional self-fashioning as both storytellers and observers of nature. I deploy blue-chip wildlife filmmaking as an example of public-facing scientific representation, applying the discipline of history and philosophy of science's focus on models and simulations in a new arena. Lastly, I describe a new role for making-of-documentaries in shoring up the authenticity of recent blue-chip programming through the

former's deployment of the documentary style of observational realism.⁸ Overall, I aim to integrate recent blue-chip wildlife films into the ongoing scholarly treatment detailing the ways in which our experience of nature has been culturally constructed. In what follows of the introduction, I will give an overview of the dissertations' arguments and approaches, followed by a description of the theoretical motivations of my research.

Overview of Chapters

Chapter 1 serves as a review of the bodies of literature that contribute to the above research questions on the blue-chip renaissance in wildlife filmmaking. I draw from a variety of relevant disciplines: documentary studies, the history of natural history, science communication, environmental studies, animal studies, the philosophy of science, and science & technology studies. The breadth of such research demonstrates very well the interdisciplinary relevance of wildlife films and the productive possibilities of such inquiry. I divide the scholarship that treats the topic of wildlife films into three groups corresponding to a trio of conceptual binaries: those focusing on entertainment-education, authenticity-artifice, and nature-culture. While my categorization is neither exclusive nor exhaustive, it reflects both the potential significance of wildlife films as an object of inquiry to productively grapple with those binaries, and suggests that the relative neglect of wildlife films within academic scholarship is the result of their location at the nexus of multiple disciplinary investigations. In other words, wildlife films' relative lack of scrutiny may depend on disciplinary boundary-drawing that does not account for their status as fully hybrid objects across those categories. Wildlife films' hybridity across these binaries is both a challenge to traditional disciplinary areas of interest and an opportunity for interdisciplinary inquiry.

⁸ Observational realism in documentary film is a mode in which the filmmakers record what took place on location without directly generating the action. Through formal conventions including unobtrusive cinematography, a lack of interaction with the film's subjects, and durational shots, observational realism supports the contention that filmed events occurred as depicted, without filmmakers' intervention. It is associated with the Direct Cinema and Cinéma Vérité movements: Direct Cinema involves "fly on the wall" filming, as though the camera records an objective reality without affecting it, while Cinéma Vérité can include interactions between the filmmaker and documentary subject, which are still considered truthful representations of the world. See Nichols (2001), Bruzzi (2000), Corner (2015) and in particular Gouyon (2016) who describes how this style has been used within wildlife filmmaking. I further describe observational realism in Chapter 2 and explore its relevance in wildlife films' making-of documentaries in Chapter 5.

Chapter 2 is titled “Taking Spectacle Seriously: Wildlife Film and the Legacy of Natural History Display.”⁹ In this chapter, I trouble the characterization of the blue-chip renaissance’s use of spectacle as unrelated or even antithetical to wildlife films’ educational mandate. By employing a media ecology approach, including not only the content of wildlife programming but also its context within documentary production, I describe the confluence of contributors to the blue-chip renaissance’s spectacular visual language: market contexts, advances in camera technology, and documentary financing. I then show that spectacle has a legacy in the illustration and display practices of natural history, where it was considered to play a legitimate role in not only the public dissemination of images of wildlife but in the production of disciplinary knowledge. I synthesize recent work in the history of natural history and museums as well as in documentary theory to reinforce the legitimacy of spectacle and immersive viewership for the creation of affective learning experiences. My analysis benefits the study of wildlife films by shifting concerns over misrepresentation to questions about the aims and mandate of natural history display, which depend not only on the transmission of information but on the culturally-relevant construction of entertaining scientific representations.

My investigations draw on the results of qualitative interviews with ten Canadian wildlife and environmental documentary filmmakers. Chapter 3, titled “‘Filmmaking is a Process of Constructing a Story’: Staging, Storytelling, and Wildlife Documentary Practice,” demonstrates the connection between filmmakers’ staging practices and their professional identity and self-fashioning as aligned or in contrast to the persona of the scientific observer of nature. While generally interpreting staging as a shortcut to nature, these filmmakers disagree about which particular film practices constitute staging, which ones are permissible in today’s film production climate, and how staging is related to storytelling. Indeed, these filmmakers emphasized the importance of storytelling in their profession and the inescapable constructedness of film narratives regardless of the extent of staging practices involved. As a result, Chapters 2 and 3 are aligned in their repudiation of the over-focus on accuracy and the educational mandate within wildlife film scholarship, as filmmakers’ own voices reveal the importance of entertainment not as a constraint but a *sine qua non* for wildlife filmmaking.

⁹ A version of this chapter was published in 2018 in *Science in Context* 31 (Volume 1: Science in Film and the Deficit Model) 15-38. © Reprinted with permission.

My qualitative interview methodology fits in with recent approaches in documentary film studies that have begun to take filmmakers' own voices more seriously. Many works of documentary film theory have speculated about filmmakers' attitudes based on the content and style of their filmic texts. In particular, Nichols' "axiographics" (1991) describes how filmmakers' ethical interactions with their subject matter leave traces that are interpretable by studying the documentary text. However, concerns that documentarians' practices do not always result in explicit textual traces have motivated an empirically-oriented approach. An early example is film historian Ann Shapiro's interview of documentarian Jill Godmilow on the topics of documentary authenticity, reenactment, and filmmaker responsibility; their theoretically-informed conversation was published as a co-authored article (1997). More recently, Kate Nash (2011a; 2011b) has described the motivations behind an emerging turn to empirical documentary scholarship. Nash draws from work focused on filmmaking practices such as survey and interview studies of filmmakers (Aufderheide et al. 2009; Nisbet and Aufderheide 2009; Corner 2008; Sanders 2007). Such scholarship examines documentary practices and tends to overturn assumptions that filmmakers have a naive view about their filmmaking practices. Nash's work on documentary practice suggests that critical attention to filmmakers' experiences makes the work of documentary scholarship "richer and more relevant by considering the actual practices of documentary making" (2011a, 2). To that end, I have as much as possible included filmmakers' full-length responses.

I interviewed ten wildlife and environmental documentary filmmakers, film producers, and science consultants whose documentaries have been broadcast in Canada on the CBC's *The Nature of Things*. Some participants are working scientists who consulted on documentaries, while others make a living producing independent films or offering freelance footage to broadcasters. One former filmmaker works for a broadcaster, the CBC's *The Nature of Things*, as senior producer. Together, these interviewees offer a cross-section of roles required within Canadian wildlife and environmental documentary production. They were recruited based on their participation in filmmaker and documentary producer Michael Alder's public lecture series titled "'Picturing 'Truth': Environmental Science and the Media,'" which was part of an environmental sciences course at the University of Toronto's Scarborough campus in the 2012 Fall semester. Within these lectures, the filmmakers, producers, and scientists showcased portions of their films, described some of their filmmaking experiences, and answered questions from the mostly-undergraduate audience. My interviews involved a set of prepared questions, mostly open-ended, and each ended

with a more “conversational” segment where we could discuss particular topics in more detail (see *Appendix I*). We discussed the challenges of filming animal subjects, their professional experiences, and their attitudes about the representational conventions of animals within documentary films, drawing from their varying degree of familiarity of the wildlife genre.

In Chapter 4, titled “Animal Stand-Ins: Representation in Blue-Chip Wildlife Films” I further explore the connection of modern wildlife films with the legacy of natural history display by clarifying these films’ representational functions. While Chapters 2 and 3 broaden the scholarly treatment of recent wildlife films by focusing on their production, broadcast, and historical contexts, this chapter takes a different tack, deepening the analysis of wildlife film representation employing the extant conceptual toolbox from the philosophy of science’s interest in scientific representation. I describe how wildlife films’ footage of animals and their behaviour represents actual animal bodies, entire species, and biological concepts. Using conceptual analysis, I offer a taxonomy of representation by dividing footage into three functional categories: displaying landscapes, illustrating organisms, and demonstrating particular theoretical categories of behaviour. I go further to describe these representations as both models and simulations of animals and their behaviour, drawing from the philosophy of science’s interest in the topic. By characterizing blue-chip wildlife films as models and simulations, I can make explicit their specific contribution to representations of nature, which is a curated demonstration of liveliness.

In Chapter 5, titled “Performing Authenticity: The Making-of Documentary in Wildlife Film’s Blue-Chip Renaissance,” I investigate how the blue-chip renaissance promotes the authenticity of its wildlife programming. I build on the work of previous chapters to explore the prominence of making-of documentaries (MODs), using as a case study the behind-the-scenes promotional trailer for *Chimpanzee* (2012), which was released by DisneyNature (the wildlife film subsidiary of the Disney corporation). Because the blue-chip renaissance depends on a rhetoric of unobtrusive, on-location filming within wildlife footage, peripheral material (including DVD bonus features such as MODs, promotional trailers, and discrete segments within wildlife program broadcasts) promotes the authenticity of this footage by revealing its practical and technical contexts of production. MODs focus on wildlife filmmakers enduring hostile conditions during filming and the filmmaking and equipment innovations that make the acquisition of never-before-seen footage possible. Chapter 5 extends the previous analysis of MODs by Gouyon (2016) and shows how the stance of “claimed artificiality” disclosing staging techniques within films such as

Winged Migration (2001) is no longer employed during the blue-chip renaissance. Instead, the MODs of the blue-chip renaissance employ a deliberate style of observational realism. These films emphasize their productions' on-location filming and the achievement of never-before-seen footage while minimizing the unprompted disclosure of staging techniques. MODs thus have a key role in the blue-chip renaissance's transformation of public natural history, foregrounding wildlife films' authenticity and their quest narratives to locate and film particular animals.

These quest narratives form part of what Cynthia Chris refers to as the "animal as object" approach from early expeditionary wildlife filmmaking. In *Watching Wildlife*, Chris described how the wildlife film genre has "shifted from a framework in which the animal appears as *object* of human action [...] to an *anthropomorphic* framework, in which human characteristics are mapped onto animal subjects, to a *zoomorphic* framework, in which knowledge about animals is used to explore the human" (Chris 2006, x, emphasis in original). While Chris' investigation focuses on the reciprocal cultural influence of wildlife filmmaking, especially through a textual analysis of these films' portrayal of sex and gender roles, I draw from her framework to characterize the blue-chip renaissance as a return to the "animal as object" stance for filmmakers. MODs offer the context of filmmakers' journeys to locate and film animals of interest, while the marketing and promotion of these films emphasize how footage of these animals-as-objects was achieved.

In the conclusion of this dissertation, I position each chapter's findings in terms of a return to this "animal as object" approach. Given blue-chip wildlife film's current stance of non-interventionist filmmaking, this "animal as object" approach involves a significant tension based on the challenge of the recalcitrance of animal behaviour. Such tension motivates filmmakers' professional identities, the legacy of natural history display in wildlife filmmaking, the content of MODs, and the blue-chip renaissance itself. I also point to relevant directions for future inquiry, including especially the difficulties in measuring wildlife films' cultural impacts.¹⁰ One of the major challenges of wildlife film scholarship seeking to describe films' individual or aggregate cultural impacts has been a lack of studies of audiences. With a few exceptions, notably Thomas Austin's survey of British viewing habits (2007) and Adrian Ivakhiv's inclusion of viewers' online reviews (2013), there has been little empirical work on audiences. As a result, wildlife film scholars depend on proxies such as viewership numbers to infer the genre's prominent cultural role, or infer

¹⁰ See especially Palmer's (2010) description of this challenge in his ninth chapter, "Sins of Omission: Leaving Conservation Behind."

how film styles alter audiences' views or behaviour. In particular, the question of wildlife staging makes assumptions about audiences' ability to be misled by particular techniques. Absent from these discussions are viewers' attitudes and experiences. I draw on Megan Halpern's science communication scholarship (2014; 2018) to suggest inroads to making audience's experiences central to the study of wildlife film impacts.

Theoretical Approach

In this dissertation, I draw from the theoretical framework of the social construction of science (Knorr-Cetina 1981; Pickering 1984; Latour and Woolgar 1986; among others) prominent within science and technology studies, to explore the ways in which wildlife films offer a curated version of animal behaviour, one that reflects human social and cultural reality. I am reluctant to label this project as entirely constructionist, however, as I believe such an approach fails to account for the ability of the often-recalcitrant world to resist our categorizations and representations. The linked histories of natural history and wildlife film production are replete with examples of animals refusing to produce theoretically-expected behaviours. In addition, the representations of animals within wildlife films depend in no small part on real animals making up the profilmic space; regardless of the mediations involved, wildlife filmmakers depend on what an animal will do while the camera is rolling.¹¹ Such recalcitrance amounts to “one of the clearest ways in which ‘reality’ intervenes in the making of a [wildlife] film” (Ivakhiv 2013, 200).

I am particularly interested in the real-world intersections between animals and our concepts of those animals, or what Challinor's introduction to *Perceptions of Animals in American Culture* emphasizes as the link between people's attitudes about and perceptions of animals with “our interaction with nature and thus our impact on the natural world” (1989, 2). Graeme Wynn's articulation of the challenge of grappling with nature as constructed is particularly germane here. For Wynn, the difficulty is not really the nature-culture conceptual dichotomy itself, but that we actually live and interact together with animals:

[E]motion and sentiment have often exercised enormous influence upon conceptions (and thus constructions) of nature and wildlife. Yet this is not to say that the physical world is a product of the human imagination or that there is no such thing as reality [...] The trouble

¹¹ The profilmic (or pro-filmic; also referred to as profilmic space or the profilmic event), is a term of art in film studies designating the real elements filmed by the camera. In other words, the “slice of the world in front of the film camera” (Kuhn and Westwell 2012).

with nature stems from its omniscience and its complexity, as well as from the ways in which it has been represented (2006, xxi).

Wynn's articulation replicates William Cronon's contention that "The material nature we inhabit and the ideal nature we carry in our heads exist always in complex relationship with each other, and we will misunderstand both ourselves and the world if we fail to explore that relationship in all its rich and contradictory complexity" (1996, 22). Thus, an approach to wildlife films that heeds the interrelated human conceptual and representational practices as well as nature's material capacities is warranted.

This approach challenges social trends that diminish the interrelatedness of nature and culture. Bruno Latour's (1993) account of modernity's gradual "purification" despite its production of nature-culture hybrids applies well to blue-chip wildlife films, which are held up as visions of real nature, purified of all vestiges of human involvement. Indeed, Gouyon's (2016) treatment of the making-of documentary (MOD), the behind-the-scenes footage of filmmakers at work, describes a historical "purification" of human beings from natural history documentaries correlating with their increased presence in MODs.¹² Usefully, Timothy Lenoir (1997) offers an intermediate ground where phenomena are robust outside of our attempts to understand them, but science is constrained by prior theories, instruments, disciplines, political-economic forces, and aesthetics. For Lenoir, scientists know the world through their material practices, which are seamlessly bound up with social and cultural interests. However, we can escape cultural relativism because nature provides "resistances" that constrain our beliefs. Animals' filmable behaviours offer those resistances.

Preexisting expectations and narratives of animal behaviour, with complex origins in social and cultural concepts, have influenced the development of knowledge about animal behaviour in ways that undermine traditional notions of scientific objectivity. Donna Haraway's *Primate Visions* (1989), for example, argued that primatologists' expectations of male and female characteristics obscured the accurate observation and reporting of female primates' complex social and sexual strategies. A combination of the rise of women primatologists and the female primates'

¹² Gouyon is not the first scholar interested in wildlife filmmaking who draws from Latour. Gail Davies' PhD thesis is an actor-network analysis of the BBC's Natural History Unit and its processes, based on extensive interviews. For Davies, Latour "provides a way of dealing symmetrically with both the natural science and cultural production of natural history film-making, and positioning the stories of natural history film-making within accounts of on-going practices of boundary making between nature and culture, expert and lay, global and local, subject and object" (1998, 13).

resistances to masculinized narratives eventually overturned those expectations. Chris contends that wildlife films are also the site of ideological expectations. These films involve

[...] both purposeful ideological work and unconscious elaboration of beliefs so normalized as common sense—about nature, animals, race, gender, sexuality, economic and political formations—that they may not be recognized (by filmmakers, by television programmers, by scientists, by audiences) as ideological. (2006, xix)

Thus, wildlife filmmakers and science consultants similarly come to their projects with prior expectations of animal behaviour which are not always fulfilled on location; this is the main professional challenge for wildlife filmmakers which I treat at length in Chapter 3

One of the aims of this dissertation is to explore what it means to treat wildlife films in their hybridity. For Latour (1993), hybrid objects are co-constituted in terms of both nature and culture. These dual concepts are in foundational relation with each other, despite the overarching project of modernity being to classify and order the natural world through purified representational categories. For wildlife films this purification results in “representations of ‘nature in the raw’ [which] erase this history and mystify their construction” (Davies 1998, 19). In Chapter 2 I argue that wildlife films inhabit the legacy of natural history display, and that natural history in general (and not only its display) has a hybrid identity as both natural knowledge and aesthetic experience that similarly resists purification. It is, of course, trivially the case that wildlife films are products made by people (culture) about real animal bodies (nature). I treat wildlife films as hybrids by attempting to take neither their scientific content nor their cultural setting as uncontaminated pure knowledge or as artificial constraints on the other. Taking that hybridity seriously has consequences for my analysis. The staging of animal behaviour, for example, can no longer be dismissed as a commercial constraint on otherwise pure scientific representations for the public. It is motivated by a complex set of relations between recalcitrant animal bodies, scientific concepts of animal behaviour that change over time, broadcast production and market conditions, assumptions about audiences’ preferences, and the reputability of both individual filmmakers and natural history broadcasters to authoritatively show and tell us about nature. In this way, neither the nature nor the showing or telling can be simple or self-evident.

My focus on spectacle was inspired by recent work from the fields of science communication, the history of natural history museums, and documentary theory. Scholarship on the question of the roles of entertainment and education has converged for a heightened appreciation for the importance of viewers’ experience. David Kirby’s *Lab Coats in Hollywood:*

Science, Scientists, and Cinema (2011) argues that entertainment and education are co-constitutive within scientists' work as consultants for feature films. Although the wildlife films I discuss are different from mainstream blockbuster films, the same relevant questions apply: how does the educational mandate of wildlife documentaries intersect with the demands of entertainment? The importance of immersion and affect within natural history museum spaces on the educational outing has been acknowledged by historians of museums, especially Alison Griffiths (2002; 2008) who includes video installations and the giant IMAX screen as creating immersive experiences. Meanwhile, documentary scholarship has begun to emphasize the pleasurable experience afforded viewers of beautiful films. This work is both a response to what is now considered an over-focus on topics of representation and documentary sobriety in canonical texts, and an argument that documentary studies should pay more attention to features of documentary that have historically been considered more frivolous and unserious, such as emotional expressiveness, delight, and spectacle. In particular, Keith Beattie's concept of documentary display, or the cinematic "showing" as opposed to "telling," offers an alternative to analyses of informative accuracy (2008). Both of these disciplinary moves support approaches by science communication scholars and practitioners that move away from the deficit model and towards a mode of greater engagement with audiences. The deficit model of science communication assumes that a lay public, deficient in scientific knowledge, receives that knowledge via one-way communication from experts. The deficit model has been increasingly criticized for its portrayal of a homogenous, passive public. As I show in Chapter 2, deficit-model thinking motivates accuracy concerns within wildlife film scholarship. Under this view, such programs become vehicles for the transfer of facts from experts to viewers; in other words, they are textbooks that happen to be on film. Kirby's study of the scientific content within blockbuster film production, and in particular the role of science consultants in fiction film production, concludes that it is science's contribution to story, rather than to accuracy, that marks successful consulting partnerships. As a result, my dissertation explains the ways in which wildlife films' authoritative portrayals of nature are not distorted by non-scientific factors but instead are produced as thoroughly hybrid objects.

My approach has methodological consequences for this dissertation; its interdisciplinarity and mixed methodology are designed to generate a fuller treatment of these multifaceted hybrid products. It became clear in early iterations of the dissertation proposal that multiple, interacting disciplinary tacks and methods are required in order to fully treat wildlife filmmaking as a hybrid

topic. I initially planned to focus on the conventional STS disciplines of the history and philosophy of science, interspersed with film studies analyses of particular wildlife film footage. In the initial course of my research, however, it became clear that the production, broadcast, and market contexts had a more important role to play in my story of recent wildlife filmmaking than these approaches alone would allow. I could not relegate these contexts to the margins or treat them as constraining forces on otherwise-scientific wildlife content. This realization opened the possibilities for additional and interacting research methods. Some of these came about fortunately, thanks to an unexpected Toronto-area lecture series of documentary filmmakers recruited from CBC's *The Nature of Things* that gave me access to Canadian wildlife and environmental filmmakers. Others were the result of inspiration from other wildlife film scholars; for example, Morgan Richards' work (2013a, 2014) demonstrates the benefits of a media ecology approach for taking production and broadcast contexts seriously while also appreciating wildlife films' historical and scientific contexts. In sum, the complexity of wildlife films as a research topic required multiple context-expanding approaches. As a result, I consider my research to align with scholarship that similarly brings additional frames to bear on complex hybrid products, as in the examples of Kirby's taking entertainment contexts as co-constitutive for fiction films with scientific content, or Beattie rehabilitating pleasure and display for analyses of documentary.

Closing Remarks

I end the introduction with two relevant remarks about my approach. First, my project is not a judgement on filmmakers' present or historical practices. I am not interested in pointing fingers at elements of artifice in wildlife filmmaking practices, nor in denigrating any representations of wildlife in such films as lacking in realism or authenticity. These attitudes have been expressed at times within extant wildlife scholarship, but they are not an appropriate stance for this thesis. Rather, I offer an account of the rich and textured representation at work in the cultural touchstone of recent blue-chip wildlife films. As a result, I do not offer an outsider's normative standard for filmmakers, whose practices and attitudes both shape and are shaped by the current documentary broadcast landscape and who generously shared their experiences with me within the set of interviews. In addition, such a stance would implicitly suggest that a completely pure representation of wildlife is possible within the field of documentary, which is undermined by the field's self-reflexive analysis that all modes of documentary are particular

constructions of their subject matter, based on their filmmakers' choices. Instead, I suggest that these described practices can be a fertile basis for thinking about our constructed notions of wildlife authenticity.

Finally, in what follows I do not segregate the terms "wildlife film," "nature documentary," or "natural history documentary." This choice is both motivated by practitioners' writing (eg. Palmer 2010) and is the results of my qualitative interviews. It is also a response to Bousé's question, "Are Wildlife Films Really 'Nature Documentaries'?" (1998), in which he describes wildlife films, particularly the Disney True-Life Adventure series, as not belonging to the category of documentary. Bousé's distinction depends on his interpretation of wildlife films' extensive use of techniques (editing, time compression, and the use of composite animal characters) that would seem to disqualify them from being proper documentaries. For the purposes of this dissertation, I consider this distinction not to be relevant for two reasons. First, my review of documentary scholarship suggests that there is no clear or consistent boundary demarcating documentary from the rest of filmmaking. Indeed, the central question of what counts as documentary has motivated transformations in documentary filmmakers' approaches to their subject matter as well as shifting attitudes about permissible techniques. In other words, there is no particular technique that can definitively exclude a film from the documentary category.¹³ Second, I show that the blue-chip films and television programs within my period of interest have converged in a style distinct to the blue-chip renaissance; there is no easy division anymore between a "British style" of natural history documentary and an "American style" wildlife film that was relevant to Bousé's analysis twenty years ago. The Disneynature suite of films and the BBC Natural History Unit's programming share conventional blue-chip subject matter, a distinct visual language, a rhetoric of unobtrusiveness, and even some of the same filmmakers and footage. For example, the first Disneynature release, *Earth* (2007) includes footage from the BBC Natural History Unit's *Planet Earth* series, while Alastair Fothergill, producer of many blue-chip series for the BBC, has produced two of Disneynature's documentaries: *Chimpanzee* (2012) and *Monkey Kingdom* (2015). As a result, using "documentary" as a segregating label is no longer warranted. I do, however, refer in a few instances to "natural history" films/documentaries, following the terms' usage within some wildlife film scholarship. I do this to further motivate their similarity (for instance, by

¹³ Even techniques that seem at first glance antithetical to documentary, including the use of actors, animation, and other elements from the film industry, have been employed within documentary films.

pointing out that films considered natural history documentaries nevertheless follow a set of plot structures, as Barbara Crowther has shown).

My treatment of the blue-chip renaissance shows how this style emerged to transform the visual landscape of natural history using cutting-edge technology while relying on the long legacy of scientific representations of wildlife. As such, these films are similar to the two examples I have used to open this introduction: Google Earth and the genomic archive of Muybridge's running horse. They are each hybrids, entangling the natural world, technological assemblages, and human cultural purposes. In the following chapter, which reviews a set of relevant scholarly literatures, I examine what it means to explore wildlife films' hybridity across the longstanding conceptual binaries of entertainment-education, authenticity-artifice, and nature-culture.

Chapter 1

Literature Review

Blue-chip wildlife films, as objects involving technology, culture, and nature, are co-constituted through their educational and entertaining roles. On the one hand, they have faced critical scrutiny for storytelling and spectacular imagery that detracts from an appropriately serious tone for knowledge dissemination. On the other hand, wildlife films are equally criticized for overemphasizing factual knowledge, dullness, or depressing environmental messages tantamount to making viewers “take their medicine.” They are paradoxical—offering representations of pristine nature with no traces of civilization, while being produced through complex assemblages that include animals, people, equipment, technologies, corporations, logistics, and networks of international coproduction. Their marketing and promotional efforts highlight how their authenticity stems from filmmakers’ expertise and skill; filmmakers, their footage, and institutional sites of production are positioned as deserving of audiences’ trust. Yet even the most prestigious wildlife broadcasters face periodic allegations of staging and fakery and must justify their filming practices. These levels of artifice seem at times to conflict with both implied and explicit claims of on-location filmmaking, non-intervention, and narrated descriptions of the animal behaviours being filmed. In short, wildlife films are complex, hybrid objects, suffused with elements of these longstanding and seemingly-intractable tensions.

These tensions come into even greater focus during the blue-chip renaissance in the early twenty-first century. In a move away from the lower cost, “reality-TV”-style animal programs of the 1990s, a few wildlife broadcasters renewed the production of high-cost, spectacular wildlife programming that benefitted from enhanced camera and other film technologies (in particular, HD cameras and mounts), heightened international coproduction, and increased consumer demand for wildlife films for home viewership.¹⁴ These films showcase an apparently timeless nature; by design, they can be endlessly reedited and distributed to diverse global markets (Richards 2009; 2013a). But as a result, the animals in the BBC Natural History Unit’s *Planet Earth* (2006) or Disneynature’s *Chimpanzee* (2012) remain charismatic inhabitants of a pristine wilderness

¹⁴ I describe high-definition (HD) film technology’s rhetoric of enhanced representation of reality in Chapter 2.

regardless of the actual state of the planet or of their species' potentially endangered status.¹⁵ Even though Disneynature runs well-publicized Earth Day-linked conservation campaigns accompanying their yearly theatrical releases, which donate millions of dollars from opening-weekend box office proceeds to conservation charities, these programs are not environmental films and do not necessarily discuss conservation issues. As a result, the increased prominence of recent wildlife programming means debates over their role and responsibilities as representations of nature have increased among practitioners, film critics, and scholars.

Wildlife films have long played a significant role in the public perception of animal behaviour and cultural attitudes about nature (Mitman 1999). However, their relative neglect in scholarly literature results from their complex and boundary-straddling identities. In this way wildlife films are similar to zoos, a topic Elizabeth Hanson (2002) suspects to have been neglected by historians due to its conceptual hybridity. Zoos are a combination of “low” and “high” culture, with potentially-conflicting aims of recreation, education, and conservation. In addition, Hanson contends that zoos may not be perceived as serious scientific sites. They may be “too entertaining, connected to neither museum-based zoology nor laboratory science, or simply unscientific ‘places of spectacle and dilettante scientific interest’” (2002, 7; quoting Brambell 1993, 27). The paucity of research into wildlife films has been occasionally noted by scholars. Cultural geographer Gail Davies, situating the relevance of work on modernity to histories of natural history filmmaking, remarked that “there is little that works across culture, nature, and communications” (1998, 12). Research dealing directly with wildlife films is limited thanks to their position at the locus of so many different domains, while residing within the exclusive purview of none.¹⁶ Remarking on the disinterest in nature films on the part of his fellow film studies scholars, Scott MacDonald claims that “[t]here are few better indications of the educationally counterproductive gap between the

¹⁵ These tensions suffuse scholarship on the contrast between beautiful blue-chip films and newer “green” wildlife films with explicit environmental messaging. See Palmer (2010), Richards (2014), and the Afterword to Mitman (2009). Scholarship on the arts' responses to the anthropocene is also relevant. For example, environmental cultural studies scholar Stephanie LeMenager's *Living Oil* describes the “petromelancholia” at the heart of petroleum's extractive legacy (2014), while Stanescu analyzes the mourning of other animals as a political response to precarity (2012). These responses are in contrast to what Davies characterizes as “natural history films as documents of a culture trying to come to terms with the death of nature” (1998, 28).

¹⁶ Wildlife films are not a prevalent topic in film studies (see MacDonald 2006), although the relevant related topics of environmental filmmaking (Vivanco 2002; Schutten 2008), documentary ethics (Aibel 1988; Ruby 1991; Sobchack 2004; Prosser 2005; Butchart 2006; Saxton 2009; Maccarone 2010; Nash 2011a, 2011b), and documentary production (Silverstone 1985; Baker 1989; Bullert 1997; Ashuri 2010) have attracted a large share of scholarly attention.

humanities and the sciences” (2006, 4).¹⁷ For Bousé, the scholarly neglect of wildlife films and their being shoehorned under the “documentary” umbrella have contributed to a “conceptual and taxonomic chaos” (1998, 119). Whatever the specific reason for wildlife film’s neglect in scholarship, the increased prominence of recent wildlife films offers a rich field of attention for scholars of contemporary representations of nature, as well as allows my dissertation to partially remedy the situation.

In this selective review of the literature, I have segregated the areas of scholarship into those dealing with each of these significant and long-held divides: entertainment-education, nature-culture, and authenticity-artifice. While there is of course overlap in their topics of concern, with some authors speaking to more than one of the divides, the overall schema works to show how different aspects of wildlife film have been variably relevant in diverse literatures. While much of this scholarship does not treat wildlife films directly, I aim to show how wildlife films as a research topic can contribute to debates and disciplinary approaches already underway, and how I have taken up the ideas and methods of this literature in this project.

Entertainment-Education

Most scientists are good teachers, and they often have a love of life and a good sense of humor, and all of that would come out in a true, relaxed exchange. The audience would be able to see in the scientist a vibrant person playing with ideas, instead of someone locked in lecture mode. And if we were lucky, a moment would come while we were on camera in which I finally understood a difficult concept, and the scientist’s excitement, as well as mine, would be palpable. We hoped for moments like these, because the moment of revelation would be an event and not just an explanation. It would be real television. (Alda 2006, 183)¹⁸

The question of wildlife films’ entertainment and educational values is pertinent to broader issues and debates within the fields of science communication, the public understanding of science, and the history of science, particularly with regard to natural history and museums. This question also relates to film scholarship on wildlife documentaries, as well as documentary more generally. Do these films deliver factual content or entertaining experiences to viewers? Do they inspire a love of nature or a conservationist ethic? Should they? What continuities are there between natural

¹⁷ Television scholar Mills contends that nature series fare better in receiving academic attention than other, more-neglected television genres such as soap operas, whose near-complete marginalization is motivated in part by scholars’ assumptions about these programs’ viewers. He argues that such “invisible television” requires greater critical attention (2010, 8).

¹⁸ Actor Alan Alda was the host of the science interview series *Scientific American Frontiers* from 1993 to 2007.

history's current and previous relationships with the public, and how have trends in display and exhibition negotiated a balance between entertaining visitors and providing spaces for the contemplation of natural specimens? In this section I will describe trends in literatures that examine the tensions inherent in public representations of science with mandates to both entertain and inform.

Science Communication, Literacy, and Popularization

The issue of the perceived entertainment-education spectrum in science communication was recently complicated by Kirby (2011) who showed that relationships between film directors and science consultants had meaningful impacts on the science contained within these films, and that successful collaborations of this type required scientists to appreciate the importance of story and to relinquish an over-focus on accuracy. Kirby discovered that scientists' collaborations were about more than improving the scientific content of films:

It is not the facts themselves but the impact of those facts on perceptions of science that matter for the scientific community. Cinematic images carry a cultural currency that both reflects and impacts public attitudes towards the scientific enterprise. Cinema interacts with other mass media and with formal scientific discourse to create a technoscientific imaginary that impacts what science means to the public (2011, 228-29).

As a result, Kirby rejects the deficit model of science communication, which conceives of a lay audience lacking accurate scientific knowledge. Instead, cinema is one venue in which cultural meanings of science are communicated, in part through the work of collaborative relations with science consultants.

Kirby's statements are engaging with an older and important discussion about science literacy and publics. As early as the 1950s, science literacy scholarship has been heavily invested in ameliorating the perceived deficiencies in public scientific knowledge, under what science communication scholars call a deficit model (Bauer et al. 2007; Durant, Evans, and Thomas 1989). In an early article, Roger Cooter and Stephen Pumfrey (1994) express dismay that historians do not engage in critical reflection about either non-elite natural knowledge or public interpretations of science that differed from those of popularizers. A watershed moment in the mid-1980s was the release of Walter Bodmer's (1985) Royal Society's report demanding improvements to the public understanding of science, not only in terms of their scientific knowledge or literacy, but also the scientific process and its methods. The report amounted to a call for better public understanding of science, while retaining the same assumptions about a public deficit in scientific knowledge that

needed to be remedied. Under this view, public broadcasters such as the BBC had a mandate to educate the public about science's findings and processes, through the Natural History Unit's wildlife programming or *Horizon* science documentaries. More recently, Halpern (2014) has argued that efforts to improve the public understanding of science often translated into a call for a better public appreciation of science, maintaining elite control over the standing of scientific experts. Instead, Brian Wynne has argued, in a seminal study of trust and credibility in science, that communication and scientific institutions demonstrated the construction of complex and contingent social identities, as well as the lay "extensive informal reflection upon their social relationships towards scientific experts" (1992, 281). Issues of science literacy thus connect to attitudes about expertise, the social standing of science and scientists, and societies' interest in informal education. The latter domain encourages the public funding and broadcast of science documentaries and wildlife films, which forms their educational mandate and motivates perennial concerns about their accuracy. I describe these accuracy concerns as being related to deficit model thinking in Chapter 2.

This interest in fostering public engagement with science, representing a shift away from conceiving the public as deficient in knowledge or understanding, required examining issues of trust, power, and authority in relation to science and science policy. Thomas Gieryn is responsible for the conceptual tool of "boundary work" (1983): how science is represented to its publics and distinguished from other activities. Boundary work offers demarcation criteria for science's credibility, support, funding, and prestige. Gieryn's later work (1999) argues that scientific authority does not come from the bench or from peer-review, or from some essential quality of science we can demarcate from other pursuits. Instead, it emerges downstream, at the consumption end, where authority is contested in the public sphere within debates over the accuracy and interpretation of facts, or over how scientific findings should inform laws and policies. Science, he claims, is endlessly remade and does not converge on a single reality. He contends that "upstream science substantially underdetermines the epistemic authority that marks its consumption downstream" (1999, x).

Questions of science literacy are linked to this issue of scientific authority. Wolff-Michael Roth and Angela Barton (2004) recast scientific literacy as an emergent, social-context-relevant, accessible, non-elite ability to apply tools and methods of science in ways that make a difference to someone's life. For Roth and Barton, scientific literacy is a property of situations, not

individuals; what matters is real socio-scientific problem solving, not abstract classroom work. Activists for a new conception of scientific literacy, they interpret it as needing to “be understood as community practice, undergirded by a collective responsibility and a social consciousness with respect to the issues that threaten our planet” (2004, 3). Wildlife films that call attention to local environmental issues, that do not minimize the human impacts on wildlife, or that offer viewers concrete inroads to engagement support such scientific literacy in practice (Palmer 2010). Activist approaches to science can invigorate community engagement with science as well as spark scientific progress based on this situated and politicized scientific literacy, as in the AIDS activism Steven Epstein describes as fighting against both the disease and entrenched scientific authority (1996). Indeed, Latour (2004b) warns that advocates of the social construction of science have contributed to the erosion of scientific expertise, where activists and politicians can undermine scientific authority on consequential issues including climate change and vaccination; his work, like Epstein’s, demonstrates the real-world effects of struggles over scientific credibility.

Historians are interested not only in how scientific knowledge was communicated in general, but also how public audiences experienced spectacular scientific entertainments such as visual effects. Examples include Bernard Lightman’s (2007) work on Victorian popularization and Iwan Rhys Morus’ (1998) work on the scientific showmanship at work in the performance of electrical effects. For Morus, the visual nature of the demonstration of electrical effects was essential to its educational component. Conversely, other historians interpret entertainment and education as competing features in public science. Marcel Chotkowski LaFollette’s (2008) study of science popularization on the radio found opposing motivations for educational and entertaining interests in the new medium—suspicion and disinterest on the part of professional scientists and their associations, on the one hand, and the increasing commercial pressures of corporate radio, on the other, as advertisers needed entertaining programs with wide appeal. LaFollette has similarly analyzed science on television (2013), with the same treatment of commercial pressures as an external, interfering force. But increasingly, as Gouyon (2014) points out, research in the history of science and science studies has moved away from separating hybrid scientific products into distinct educational, commercial, and scientific goals. Steven Shapin’s *The Scientific Life* (2008) and Kirby’s *Lab Coats in Hollywood* (2011) are prominent examples. Historians’ focus on spectacle and popularization inform my own analysis of spectacle within the blue-chip renaissance in Chapter 2. More generally, the move towards the dissolution of a firm boundary between

entertainment and educational pressures serves my overall treatment of wildlife films as hybrid objects.

Entertainment and Education in Natural History

Histories of natural history have been especially interested in the ongoing tension between entertainment and education as aims for natural history collection and display. The practices and sites of natural history have attracted considerable attention from historians and museum studies practitioners. These issues are central to Chapter 2, where I relate blue-chip wildlife film spectacle to its legacy within natural history display and the debates over its educational and entertaining motivations.

In particular, natural history scholarship focusing on travel deals extensively with the educational-entertainment distinction, as both mandates have been present throughout the history of the discipline. In Paula Findlen's (1994) history of museums and collecting, she is interested in attitudes about “collecting and the interrogation of nature” for both practitioners and audience. For Findlen, travel is a central tenet of the new way of being a naturalist from the sixteenth century onwards, a rite of passage and credential for the aspiring naturalist, as well as a shared experience in the community of collectors. Collectors sought to recapture the thrill of the chase, as it were, from their exotic or heroic travels, meaning that having reached the museum, objects retain the aura of their trajectory made possible only through collectors’ pilgrimages. Such objects are analogous to footage of animals in remote locations within wildlife films, spanning from early travelogue or hunting expeditions (Mitman 1999) to more recent blue-chip films of global scope (Richards 2013a). In Chapter 5 I show how expeditionary filmmaking, featuring within MOD “journey” films, demonstrate the rigors of travel and the rugged virtues of filmmakers to offer contextual evidence of on-location filming.

While Findlen describes naturalists’ travel for collections and their experience as collectors, other scholarship about natural history has focused on the results of those collections: audiences’ encounters with collected specimens, and in particular how those encounters balance entertainment and education. These encounters involve not only preserved natural material, but live specimens. Helen Cowie, describing traveling menageries in nineteenth-century Britain, shows the entertainment-education distinction set up with regards to menageries and zoos was more fluid than historians had assumed: “Menageries, if less sophisticated than zoological gardens,

did perform a pedagogic function in Victorian society and *were* important vehicles for the dissemination of zoological knowledge to the masses” (2014, 117; emphasis in original). People had meaningful, direct encounters with exotic animals in menageries, which Cowie portrays as epitomizing “the empire ‘at home’” (2014, 208). Cowie’s account joins Hanson’s (2002) work on zoos to reinforce the importance of these hybrid site: both menageries and zoos as places that make encounters with unfamiliar animals. Wildlife films inherit this same legacy, and debates over their balance of entertainment and educational values thus belong to an older discourse. I develop these linkages more thoroughly in Chapter 2.

Natural history museums developed from practices of natural history collecting and display, including cabinets of curiosity. From their seventeenth-century origins in a few European capital cities, by the nineteenth century public natural history museums were prominent demonstrations of imperial knowledge through the display of specimens acquired from colonial sites. The ability of natural history museums to engender wonder and awe through their visual impact has been a focus of historians whose work complicates the privileging of educational or knowledge-producing approach to museum spaces. In Chapter 2 I draw from these histories of natural history museums to characterize the entertainment functions of natural history display and exhibition, particularly their use of spectacle to inspire wonder and awe in visitors. Spectacle is the most prominent characteristic of the wildlife films of the blue-chip renaissance, and its historical legacy within natural history display is especially pertinent for understanding how spectacle operates. I will not replicate that analysis here, but instead focus on a major trend in the historical literature: the tension between research and exhibition within natural history museum spaces.

How have historians characterized this tension? Karen Rader and Victoria Cain (2014) describe the rise and consequences of the “New Museum Idea” of prioritizing display over research in twentieth-century American natural history museums amid changing assessments of appropriate informal education, which moved from notions of exposure (that knowledge would disseminate to visitors by osmosis), to engagement, to hands-on experimental learning in museums and science centres. For Rader and Cain, these tensions over the importance of display revealed disagreements among museum professionals, and had a definite impact on assessments of the value of exhibition design:

Curators and directors' opinions on the matter varied widely, depending primarily on whether they believed museum exhibits should be more accountable to scientists or to the lay public. Museum men, believing public education should take precedence in matters of display, argued that upholding scientific standards of truth too diligently could stifle visitors' interest in nature. If specimens were not made exciting or at the very least appealing, they argued, audiences would simply stop paying attention, and museums would fail to educate the public (2014, 40)

This conflict is epitomized by John Terrell's criticism of the decrease in support for museum research and concomitant pressure to increase attendance, which he contends led to an overemphasis on enjoyment and a "museums as Disneyland" approach (1991, 52). G.W. Bates characterizes museum research staff's experience of the rise of exhibition professionals and the related increased institutional focus on visitor engagement as "a direct challenge to scientific scholarship" (1992, 22). Similarly, Philip Humphrey emphasizes that the visitor public is not the only one museums must consider; they also work for "another public, the international scientific community, served in very different ways by the inner natural history museum" and who are ill-served by museums' neglect of natural history research (1991, 6). Griffiths (2002; 2008) shows that these tensions over the proper balance of research, pedagogy, and entertainment have consistently followed periods of innovation in museum display, including the incorporation of ethnographic films and IMAX theatres in museum spaces. The above scholarly discussion over the proper role of entertainment in natural history museums is of paramount importance to my argument about the legacy of natural history display within wildlife film. As I show in the next section, these older debates reemerge in the treatment of spectacle and entertainment within wildlife film and are especially relevant to the blue-chip renaissance.

Entertainment and Education in Wildlife Film Scholarship

Similar to the above debates about natural history, a few sources position the values of entertainment and education as being in conflict for wildlife films. Robert Dingwall and Meryl Aldridge describe blue-chip wildlife films' educational mandate as being undermined by pressures to entertain. The genre's "economic and cultural constraints limit its capacity adequately to communicate the complexities of science" (2006, 147). Bousé's *Wildlife Films* (2000), a media history of the twentieth century of wildlife filmmaking, presents a genealogy of wildlife films with its source in animal fables, wherein animal behaviour has human motivations. Bousé argues that wildlife films have been overestimated as scientific education and underestimated in their role as

entertaining storytelling, which involves certain genre-specific misrepresentations. As a result, he argues that most wildlife films ought to be excluded from being labeled “documentaries,” which I will discuss in the following section. Gregg Mitman’s *Reel Nature* (1999) describes complex tensions between entertainment and educational motivations for nature films and television programs in the twentieth century. And several scholars have complicated the educational “public service” mandates of wildlife programming, particularly Richards (2013a) on the role of spectacle and Helen Wheatley describing the importance of “visual and aural splendour” (2004, 325) in the BBC’s public service broadcasting. The proper roles and balance between education and entertainment are relevant across this literature; my work argues for the co-constitution of education and entertainment for wildlife film, which is partly in line with Bousé’s assessment of the importance of entertainment in wildlife film. Throughout this dissertation but especially within Chapter 2, I differ from Dingwall and Aldridge and from Bousé by interpreting entertainment not as a constraining force on accuracy or as an external pressure from commercial sources but as foundational to wildlife film’s identity.

Wildlife filmmakers and practitioners have contributed to this scholarship by weighing in on the issue of needing to balance the perceptions of at-times conflicting requirements of entertainment and education in their films. In particular, wildlife and environmental filmmaker Chris Palmer has described the tensions arising in producing films that both entertain and inform audiences about the state of the natural world. The temptation to sensationalize animal behaviour (for example, by focusing on overly violent or sexual sequences) means that educational value might be diminished in favour of a more thrilling viewing experience. Describing the rationale for the violent National Geographic series *Predators at War*, Palmer explains:

The hard fact is that, despite National Geographic’s traditional education and conservation mission, films produced for broadcast on cable are primarily for entertainment. Their educational value is secondary [...] Money is the final arbiter of what National Geographic shows on its network. (2010, 152)

In addition, spectacular visuals contribute to a program’s entertainment value but might eclipse a program’s dissemination of information about pollution, habitat loss, or climate change—conservation issues that Palmer considers to be vital if a film is to impact viewers’ attitudes. But after seeing *Planet Earth* (2006), which combined spectacular visuals with less-explicit calls for conservation than conventional environmental films, Palmer was converted to the value of blue-chip wildlife films:

I had to admit that it was a tour de force. It offered responsibly shot, dramatic, and exciting footage, powerful reminders of Earth's stunning beauty, and a conservation message. The tone was engaging but effective. The film seemed to be reaching new audiences and making them more receptive to weightier environmental messages in the future. (2010, 161)

Palmer's work motivates my interest in filmmaker's perspectives on their experience of the broadcast landscape and the relationship between their practices and professional identity.

Despite its clear relevance to discussions about the impact of wildlife filmmaking, there has been little empirical work on its audiences' responses, including their attitudes about or behaviour towards wildlife. Austin's *Watching the World: Screen Documentary and Audiences* (2007) is an exception; it includes a chapter on televised wildlife documentaries based on qualitative surveys of audience members. Austin revealed a complex set of responses on the issues of environmentalism, education, spectacle, and enjoyment of the different subgenres of wildlife programming (blue-chip, presenter-led, local versus "exotic" locations). Ivakhiv (2013)'s ecocinema criticism explored online reviews and ratings of wildlife documentaries as a proxy for their popularity with audiences, as well as a closer analysis of chat room and web forum discussions to analyze the controversy surrounding the films *March of the Penguins* (2005), the animated penguin film *Happy Feet* (2006), and Werner Herzog's documentary *Grizzly Man* (2005), among others. Despite these exceptions, wildlife film research on impacts tends to speculate about audience attitudes (Palmer 2010), hypothesize about the consequences of different forms of animal representation (Richards 2014), or even claim that research into affect and emotional response will allow ecocritics to tell wildlife filmmakers how to best generate particular environmental attitudes (Welling 2014). Nash describes how empirical work on filmmakers is more common than that on audiences, as part of her identification of an "empirical turn" in documentary towards filmmakers' perspectives (2011a).¹⁹ The lack of empirical work on impacts is a weakness within scholarship that assumes wildlife films have important impacts. Palmer's interest in impacts in particular, including his pessimism that specific impacts can be knowable, has inspired my exploration of impacts as a direction for further research in the Conclusion.

While documentary's educational, representational, and informing roles are well-studied within the literature, relatively few film scholars focus on issues of entertainment, enjoyment, or

¹⁹ Nash (2011a) points to Aufderheide et al (2009) and Sanders (2007) as examples of such empirical results, which tend to overturn assumptions that filmmakers have a naive view about the ethical issues related to their practices.

pleasure of documentary films. Elizabeth Cowie (2011) discusses the “scopophilia” or the pleasure of spectacle in documentary, while Beattie (2008) introduced “documentary display” (which he describes as “showing” as opposed to “telling”) as an overlooked component of documentary film. We do not ordinarily think of documentary in terms of its artistic, poetic, and embodied pleasures. More specifically, a few film scholars focus on spectacle within wildlife films. Karen Scott’s (2003) paper predating the revival of blue-chip wildlife films details the importance of spectacle with a focus on the use of computer-generated imagery to incorporate extinct species into filmed landscapes in such series as *Walking with Dinosaurs* (1999). Richards (2001; 2009) has also focused on the use of computer-generated imagery within these wildlife documentaries, as has José van Dijck (2006); the latter is interested in documentary spectacle resulting from such digital effects, while grounding her analysis in spectacle’s role in knowledge production as well as its supporting relation to documentary realism. These scholars are interested in recovering story, spectacle and affective pleasure within documentary film studies from its canonical emphasis on representation. My work aligns with those aims and employs analyses showing how story, spectacle, and affective pleasure are each relevant for the blue-chip renaissance as well as essential for its prominence in portraying nature.

Authenticity-Artifice

“*Documentary: the creative treatment of actuality*” — John Grierson.²⁰

Debates within documentary film literature centre around issues of authenticity, realism, and the identity of the documentary category. While I explore in chapters to come how those issues pertain specifically to wildlife films’ representations of nature, they apply equally to documentary films in general and find expression within film studies literature about documentary. Much scholarship has focused on the issue of representation: how have documentarians represented their subject matter? The canonical source on this question, and the one which has inspired much response and criticism in film studies, is Nichols’ *Introduction to Documentary* (2001). Nichols extends the documentary category from “non-fiction film” into a dialectical taxonomy of

²⁰ John Grierson, filmmaker and critic, is the foundational, “father” figure in documentary, having employed the expression “documentary value” in a 1926 review of Robert Flaherty’s film *Moana* (1926) which is considered by many to have coined the term “documentary.” Grierson’s later definition of documentary as “the creative treatment of actuality” has been widely employed and critiqued throughout the field of film studies. He was also named founding Commissioner of Canada’s National Film Board in 1939 (Winston 1995).

documentary modes (poetic, expository, participatory, observational, reflexive, and performative). Nichols describes each of these modes as emerging from the limitations of the previous mode, and having differential configurations of the visibility of the filmmaker and the filmmaker-subject relationship. While examples of wildlife filmmaking inhabit the full spectrum of documentary modes, wildlife films in the blue-chip tradition draw mainly from the expository mode, characterized by an omniscient narrator describing the animal behaviour within the footage. However, as I discuss further in Chapters 2 and 5, elements of observational realism are present in recent making-of documentary material which emphasizes the filmmaker's unobtrusive presence in remote locations.

Similar questions over evidence and factual content, which I show to be especially relevant within criticisms of wildlife films, relate to an abiding concern over documentary identity. This concern motivates much work in documentary scholarship. Kevin Macdonald and Mark Cousins (1996) explore how the loss of the security of evidence from digital images complicated the fact-fiction boundary in documentary innovations. Nichols (1995) concurs that the categories of fact and fiction “defy hard and fast definition”, while Erik Barnouw's (1993) history of the documentary emphasized how artifice has always been a central role for documentary. Film scholar John Corner's (2000) review essay “What can we say about documentary?” positions the genre as an unstable category of expansion, dissipation, and dispersal of non-fiction film practice; his essay “Documentary Values” reiterates that the term “documentary” may be better understood as an adjective than a noun and that the genre faces tension as its settings and practices expand. For example, the development of the “reality-tv” genre has enhanced anxieties about documentary authenticity (Ellis 2005). Similarly, Paul Ward's (2006) *Documentary: The Margins of Reality* understood documentary as an “umbrella term” that stands in for a “complex set of overlapping discourses and relations”; despite this diversity, he understands the “central tension that constitutes all debates about documentary [to be] the relationship between reality and artifice” (6). For Ward, documentary cannot live up to its reputation as objective, transparent, or balanced, and the expectations that it should are limiting. Austin and Wilma de Jong's (2008) *Rethinking Documentary* is a response to Brian Winston and others' worry about “digitalisation” and the advent of digital media, examining the variety and open-endedness of documentary given its uncertain relation to truth. In this way, their work is similar to that of Richards (2001; 2009), Scott (2003), and van Dijck (2006) on digital recreations of extinct animals in wildlife documentaries.

Wildlife films have conventionally employed practices including composite animal characters and the staging of behaviours that are of particular interest to filmmakers, scientists or broadcasters (Bousé 1998; Mitman 2009; Richards 2014). The question of the authenticity of those practices relates to how corresponding film practices in documentary more broadly: namely, reenactment. Reenactment has been of interest to documentary scholars. Godmilow and Shapiro (1997) treat the issue of documentary reenactment, troubling the categories of the authenticity of footage and video evidence. Reenactment and authenticity is also key to treatments of early ethnographic film. Fatimah Tobing Rony (1996) and William Rothman (1998) both examine Robert Flaherty's classic 1922 film *Nanook of the North*, which involves extensive reenactment and scripted individual and group behaviours. Rony analyzes the extensive artifice, reenactment, and the timeless "ethnographic present," a "nostalgic reconstruction of a more authentic humanity" (14) while Rothman employs a close reading and analysis of pivotal scenes to elucidate the relationships between filmmaker and subject as well as between subject and character. For Rothman, ethnographic filmmaking is about power and the appropriation of another culture within a colonial paradigm. Reenactment is the topic of Jonathan Kahana's (2009) review essay, in which he focuses on the dual meanings of the root word "enact" (to *do* and to *perform*) in continuities of documentary. Certain practices of natural history artifice can be productively described as reenacting natural behaviours; I explore this in Chapter 4.

Authenticity and Wildlife Films

Narrowing the scope from documentary in general to wildlife films reveals that authenticity is a significant concern held in common. Research on wildlife filmmaking at the BBC's Natural History Unit (NHU) has explored this prominent production setting for representations of wildlife and its claims to authenticity. Since the NHU is the most prominent broadcaster and producer of wildlife series of the blue-chip renaissance, these histories inform my analysis of contemporary representations of nature and its claims to authenticity. Davies examined the NHU's institutional history in her 1998 dissertation "Networks of Nature: Stories of Natural History Film-Making from the BBC." Davies' actor-network analysis of the institution explains how the NHU came to world renown, unrivalled breadth, and unparalleled prestige for its representations of nature; she shows how the unit's changing practices, technologies, discourses of nature, and relationships sustained a half-century of natural history programming. Davies' later work has elaborated on this

framework, emphasizing the role of these actor networks in showing and responding to modernity's expression of nature and science (2000a; 2000b; 2003). Media scholar Richards is interested in the NHU's position in debates over environmentalism within wildlife programming (2013b), as well as its representational strategies within changing media broadcast landscapes (2014) and foundational aims to collect libraries of blue-chip footage for international distribution (2013a). Both Richards and Davies employed interviews and ethnography in their analyses of the BBC's wildlife filmmakers and producers to interrogate particular filmmaking practices, which has motivated the interview methodology I employ in Chapter 3 to connect filmmaker practices and attitudes to broader debates over staging. The media ecology approach employed by Richards has also allowed me to focus on the production and market contexts of blue-chip filmmaking and not only the content of specific representations. In other words, by following Richards' example, I have broadened my analysis to include the relevant contextual factors involved in the blue-chip renaissance.

Historian of science Gouyon (2011a, 2011b) has described the development of natural history documentaries at the NHU as practices of knowledge production. He has also shown the consequences of the professionalization of wildlife filmmaking and how its practitioners ("telenaturalists") positioned themselves as those able to speak convincingly for nature. Gouyon's work inspires my exploration of filmmakers' professional identity and the legacy of scientific observation, in both my analysis of recent staging episodes from the history of wildlife film, and my interview questions to documentary filmmakers. Lastly, Gouyon has explored wildlife film MODs using a concept of a stance of "claimed artificiality" wherein filmmakers show how staging practices are involved in knowledge production. My Chapter 5 draws from and responds to Gouyon's analysis. I argue that in the setting of the blue-chip renaissance, MODs no longer reveal staging techniques but instead serve as contextual evidence for on-location filming. In this way they perform the authenticity of their filmmakers.

Reel Nature: America's Romance with Wildlife on Film (1999; second edition in 2009), was the first comprehensive work on the topic of wildlife films. In it, Mitman offers an institutional, cultural, and environmental history of twentieth-century nonfiction animal films. Mitman draws from archival sources within scientific institutions such as natural history museums to detail the production of their filmed representations of animals, examining the interdependence between wildlife films and their scientific and cultural influences. Focusing on filmed big-game

hunting expeditions, ethological films, Disney's *True-Life Adventure* films, the rise of televised and presenter-led wildlife programming, and the popularity of charismatic species, *Reel Nature* describes the shaping of the genre's conventions and the "natural history artifice" techniques at work within the genre's changing contexts of authenticity.²¹ For later scholars of wildlife films, Mitman's account of authenticity motivates analyses of how authentic nature is constructed in other settings of wildlife filmmaking. My work builds on Mitman's research to describe how authenticity is at play in the blue-chip renaissance. One theme emerging from Mitman's work is how filmmakers have offered justifications of staging practices on the grounds that the generated behaviours are species-typical ones; I explore this theme in detail in the chapters to come.

Media historian Bousé, in his article "Are Wildlife Films Really 'Nature Documentaries'?" (1998), targets wildlife films' perceived inauthenticity. He argued that wildlife films are a distinct genre from the rest of documentary filmmaking, emerging from different film tradition from the documentary canon. For Bousé, the widespread anthropomorphism and artifice-promoting film techniques (including staging and composite animal characters) in the history of "American style" wildlife film disqualify them from counting as true documentaries, in contrast to "British style" natural history films that Bousé characterized as containing more science than narrative. Bousé's claim faces considerable challenge on at least two fronts: British natural history filmmaking contains similar human-inspired narratives (Richards 2014) as well as periodic accusations of staging (Gouyon 2016), while competing definitions of what counts as documentary have dogged the entire history of the genre. My identification of the blue-chip renaissance adds to this existing scholarship by further complicating Bousé's assessment. I demonstrate that blue-chip wildlife films have converged on a style that is neither British or American; they share the same visual language of representing wildlife, technologies, producers, and even footage in some cases. I also show in Chapter 4 that techniques disqualifying wildlife films from documentary according to Bousé's account, such as time compression, were legitimated as biological visualization.

²¹ The expression "natural history artifice" was employed by the BBC in 2008 in its admission that the series *Life in Cold Blood* involved film techniques including "placing captive animals in the wild or in purpose-built sets made to look like the outdoors" (Cauchi 2008). Mitman (2009) does not employ this expression, although his cultural history of wildlife films focuses on historical examples of staging and fakery in wildlife films, framing such examples within the tension between authenticity and artifice in these films' production.

Authenticity and Photography

The evidentiary status and authenticity of film and photography, which have featured within contemporary debates over wildlife film authenticity, are older questions have been of great interest to documentary and film scholars, none more than Winston. His essay “The Documentary Film as Scientific Inscription” (1993) examined the camera’s status and positioning as a scientific instrument and how these have been leveraged to support the legitimacy of documentary film. Winston’s (1995) *Claiming the Real* problematized the documentary form’s claim to authenticity, both through historical examples in early documentary, and the newly urgent issue of “digitalisation” which undermines the indexicality of film.²² And in the essay “‘The camera never lies’: The partiality of photographic evidence” (1998), Winston extended this manipulability to photography by arguing that confidence in the evidentiary strength of photography was always misplaced. Winston claimed that we ought to recalibrate our confidence to a “weak realist” position and understand that photographs can only offer partial evidence, because there is no such thing as unambiguous, instantly compelling photographic data. In this way, he follows John Tagg’s (1993) assessment of the discontinuous history of photographs. For Tagg, photographs’ meanings were negotiated and contextually-specific, and their evidentiary status was gained through their use by administrative and bureaucratic institutions. Accordingly, the power relations within these uses of photography and surveillance require photography’s meanings to always exceed its indexicality. In a recent cross-disciplinary collection titled *Documenting the World: Film, Photography and the Scientific Method* (2016), editors Mitman and Kelly Wilder and their contributors characterize the influential “documentary impulse” behind the massive production, circulation, and archival storage of images and films as those media entered the realm of scientific evidence in the twentieth century. While the blue-chip renaissance foregrounds its footage, particularly of animals or behaviour never before captured on film, as having scientific evidentiary status, these explorations point to a longer discourse over the construction of film as evidence.

The history of visual culture is also focused on issues of photographic representation and subjectivity, with consequences for the camera’s status as being able to represent reality in a suitably objective way. For Martin Kemp, the question “How have artists and scientists intuited visual truths?” relates to issues of trust in the camera and its mechanical apparatus; we must keep

²² Indexicality refers to the physical relationship (initially photochemical in traditional photography) between what is being photographed and the photograph itself. The term originates within Pierce’s semiotics.

in mind the subjectivities that go into photographic conventions and the instruments themselves, resulting in images that are not infallible (2006). In contrast, Peter Whitehead and Colin Keates elaborate how photography has consequences for research traditions in natural history:

Before the invention of the camera, naturalists either drew their material or employed artists to do so, and even now a good biological drawing is often preferred to a photograph because the artist can select the features he wants to emphasize. In some cases the original specimens were either not kept or have since disappeared, so that the drawing itself becomes the type. (1981, 20)

Many of the conflicts within modern wildlife filmmaking seem to reflect a division between these two modes of image-making. Indeed, Attenborough argues for the continuity of wildlife filmmaking with humankind's earliest impulses to draw animals, and describe the challenges of showing species' essential features in photography and film compared to drawings (2015).

Lorraine Daston and Peter Galison's *Objectivity* (2007) expands on these differences in their categorization of the successive stages of truth-to-nature and mechanical objectivity in the visual representation of science, where naturalists operating under truth-to-nature "interven[ed] in every stage of the image-making process to 'correct' nature's imperfect specimens" (2007, 42). The camera is the main (but not exclusive) technology referred to by Daston and Galison in their discussion of mechanical objectivity in the visual representation of science, due to its widespread use and its ability to produce, under the right circumstances, seemingly accurate and unmediated images. However, such purportedly objective images often could not depict the desired universal qualities of specimens, due to the same issues highlighted by Whitehead and Keates above. And Shapin (2008) argues that, in opposition to the image of the camera-wielding scientist as embodying objectivity and disinterestedness, dynamic scientific virtues were at play in the fluid and overlapping domains of science, technology, and business during the "late modern" period, including personality, boldness, curiosity, playfulness, trustworthiness, charisma, and even hedonism, some of which would have been considered inappropriate under norms of scientific disinterestedness.²³ This tension over the permissibility of interventions in the production of representations of nature relates to criticism of staging practices, as well as to filmmakers' responses to that criticism. I explore these issues in depth in Chapter 3 by investigating filmmakers' experiences and attitudes surrounding the filming of recalcitrant animals in the wild.

²³ The figure of the disinterested scientist is what Mitman and Wilder call the "magical illusion of objectivity" (2016, 6).

Natural History Authenticity and Artifice

Historians of natural history are concerned not only with the tensions underlying entertainment and educational aims, as I have already discussed, but also with the authenticity of representations of organisms in specific contexts as well as their reception. Mason described the history and movement of specific animal representations in the Early Modern period, emphasizing that beyond authenticity or verisimilitude, the “aesthetic appeal of awe, wonder, and enchantment that the natural world held for its early modern observers (2009, 222). Liv Emma Thorsen, Rader, and Adam Dodd’s edited (2013) *Animals on Display: The Creaturely in Museums, Zoos, and Natural History* takes up Daston and Mitman’s challenge of heeding the “how” and “why” of thinking about animals (2005), enlarging it to take into account the differences animal materiality make for animal representation. For Thorsen, Rader, and Dodd, natural history’s representational display practices are increasingly complex, meaning we must resist the temptation to make sweeping conclusions about animal representation overall. These issues remain relevant in contemporary museum spaces, as Lawrence Weschler (1995) explored in his study of the Museum of Jurassic Technology; this playful museum merges traditional markers of authenticity with fabricated exhibits to interrogate our expectations about museums. Rader and Cain also looked at curator’s specimen preferences. Pressures from other cultural representations of nature meant that to attract visitors, “specimens needed to be more than realistic. They needed to be magnificent” (2014, 38). Such concerns affected animal research and not only display: Harriet Ritvo (1994) sees in the history of zoological taxonomy a sense of diverse valuing of different animal species and as a result, no coherent Victorian attitude towards animals.

My overview of these investigations into the authenticity of representations within documentary, photography, wildlife film, photography and visual culture, as well as natural history research and display, reveal several general trends. First of all, the authenticity of images, footage, display specimens, and even modes of classification have been complicated by factors beyond realistic assessments of the animals themselves. Authenticity is context-dependent, and this context has been constructed within various domains by scientific as well as cultural factors. Under these terms, the legitimacy and evidentiary power of claims to authenticity have been defended by appeals to scientific authority, institutional credibility, or definitions of the documentary genre. Second, assessments of the boundary between authenticity and artifice for these representations argue for increasing permeability, which results from the acknowledgement of my first point

above. In other words, since authenticity has been constructed through features beyond those of indexicality to nature, there are openings for expanding what counts as authenticity. Reenactment is a key example of a practice that was once considered inauthentic but has been reclaimed by documentary filmmakers who push back on what counts as documentary. I draw from these two conclusions throughout the chapters to come when analyzing how the blue-chip renaissance has constructed its authenticity, how filmmakers conceive of and defend practices related to authenticity, how the features of scientific representations are selected or excluded, and how wildlife films employ MODs to construct and perform authentic filmmaking.

Nature-Culture

I am not interested in policing the boundaries between nature and culture - quite the opposite, I am edified by the traffic. (Haraway 1989, 377)

We are everywhere in the wilderness with white gloves on, directing traffic. (Mooallem 2013, 253)

The blue-chip wildlife genre's portrayal of a nature separate from human beings is a major topic within wildlife film scholarship (see especially Mitman 2009; Bousé 2000; Palmer 2010; Richards 2013a; Ivakhiv 2013; and Gouyon 2016). The success of its contemporary spectacular iteration is the focus of Chapter 2, while I examine the segregation of human narratives within making-of documentary material in Chapter 5. In addition, research focusing on the conceptual underpinnings of the nature-culture distinction, as well as its real-life consequences for environmentalism and conservation initiatives, is particularly relevant to the blue-chip genre's mode of representing wildlife.

The Cultural Construction of Nature

The conceptual segregation of wildlife from human beings has been examined and critiqued within environmental history. Cronon's edited volume *Uncommon Ground: Rethinking the Human Place in Nature* (1996) is a historically-influenced clarification of our culturally-constructed concept of nature; its essays undermine the view of nature as a naive, pristine reality, and of the wilderness as an Edenic source of redemption for modern human beings. The collection of essays responds to Bill McKibben's *The End of Nature* in which he asserts that we can no longer conceive of nature as "the separate and wild province, the world apart from man to which he is adapted, under whose rules he was born and died" due to the spread of human influence throughout

the biosphere (1989, 44-45). N. Katherine Hayles' chapter "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World" offers a valuable account of constructed visions of wildlife (especially with regard to natural parks, an especially-relevant parallel) and serves as a provocation for my argument that wildlife films footage operates as modeling and simulation in Chapter 4. In *The Culture of Nature: North American Landscape from Disney to the Exxon Valdez*, Alexander Wilson examines the history of built environments, examining our desire to recreate wilderness within (both literal and figurative) landscapes, and includes a chapter titled "Looking at the Non-Human: Nature Movies and TV" which deals with the variety of motivations behind "changing ideas about nature" throughout the history of nature on film (1991, 118).

As I have described in the previous section, Mitman's *Reel Nature* (1999) offers a substantive account of the tensions arising between authenticity and artifice in wildlife filmmaking's portrayals of nature. However, Mitman's work fits equally well within scholarly discussions of nature and culture. His writing interrogates how changing representations of wildlife both reflect and are informed by cultural concepts of nature and wilderness, gender roles, the family unit, and sexual behaviour. For example, in his chapter "A Ringside Seat in the Making of a Pet Star" Mitman describes how dolphins were "domesticated" into charismatic animals of intense public appeal through a combination of efforts by the film industry, scientific research, and the military. The resulting "playful, communicative, highly intelligent" dolphin showcased in the film *Flipper* (1963) and in aquaria is a constructed image that leaves out the animal's potentially less-desirable characteristics of sexual aggressiveness (1999, 178). Dolphins' charisma, including the public support for dolphin-friendly environmentalism, relied upon this construction. In addition, Mitman described how the nature film genre's reliance on "an aesthetic of pristine wilderness" segregated images of wildlife from their local populations and "reinforced a management scheme that effectively divorced humans from the natural landscape" (1999, 202). As a result, particular representations of wildlife contributed to conservation arrangements that neglect the interactions of local communities from the animals they traditionally interact with, reinforcing the nature-culture boundary. In the afterword to the second edition of *Reel Nature*, Mitman described the contrast between the growing genre of environmental documentaries and traditional blue-chip wildlife films, contending that the latter "have largely become escapist fantasy" for ignoring urgent environmental issues as well as the interconnection of human beings

and nature (2009, 214). Mitman's analysis of the wildlife genre's cultural construction of nature is seminal for my treatment of blue-chip wildlife films as hybrid objects. However, his comparative lack of interest in recent blue-chip films compared to more explicitly-environmental ones in *Reel Nature's* second edition is a challenge I respond to with my identification and characterization of the blue-chip renaissance.

The topic of nature's cultural construction is also beginning to receive more attention within film studies literature, including Julie Kalil Schutten's (2008) essay on environmental filmmaking and the nature-culture divide, "Chewing on the Grizzly Man: Getting to the Meat of the Matter" as well as Ivakhiv's *Ecologies of the Moving Image* (2013). Indeed, Ivakhiv takes issue with wildlife film scholarship's overfocus on misrepresentation, which he contends ignores that "definitions of nature [...] are all cultural and historical productions" (2013, 206). For example, according to Ivakhiv, Bousé's criticism that action-packed wildlife films are not realistic portrayals of nature's genuine "experiences of serenity and quietude" (2000, 4) reflects Bousé's particular assumptions about nature as a peaceful locus of leisure and renewal, and not any intrinsic characteristics of nature.

Concerns about the cultural dimensions of representation of animals in wildlife filmmaking involve specific debates about diversity in their depictions of animals behaviour, which also relate to the previous section's focus on authenticity. Angela Aguayo described the tensions over the depiction of animal parenting and gender roles in *March of the Penguins* (2008). Brett Mills, a critic of British wildlife films' representation of parenting, monogamy, and sexuality in animals, contends that they are not representative of the diversity observed in the animal sciences. He argues that these representations depend on "normalised human notions" of animal behaviour (2013, 100) and that this dependence is significant because animal behaviour so-presented is used to judge the "naturalness" of human behaviour. Chris' *Watching Wildlife* (2006), a feminist work of cultural criticism, connects the wildlife film genre's focus on predation and mating with preexisting ideological notions of human sexuality and gender norms. Her work undermines the presentation of wildlife programming as being either a necessarily real or unmediated look at wildlife by showcasing the colonial and sociobiological assumptions at work throughout the genre's history. These works each draw from Haraway's *Primate Visions* (1989) which explored the complex cultural and scientific influences on our study of primates, including especially the reappearance and centrality of the family unit in representations of primates. With similar concerns as Mills,

Haraway investigated primatology's appropriation as a "natural" foundation for ethics and justifications for competition. However, several features of wildlife documentaries undermine or at least complicate this line of criticism, including films' potential for multiple and contradictory interpretations (Ivakhiv 2013) as well as the existence of wildlife films that showcase more diverse forms of sexual and parenting behaviour in the animal kingdom, such as Jean Painlevé's scientific films on the bisexual acera mollusk and the seahorse (MacDonald 2006). I return to these concerns over cultural influences on wildlife film representations of nature throughout the chapters to come. Chris' framework of historical modes of wildlife film, which I discuss in the Introduction, is especially helpful for my extended argument that the blue-chip renaissance involves a return to the "animal as object" approach.

Indeed, feminist STS scholarship has been highly involved in unpacking the "naturecultures" complicating the nature/culture binary. In *Modest Witness* (1997), in line with her earlier *Primate Visions* (1989), Haraway is interested in the power of narratives to shape our scientific understanding of the natural world and how stories are used to reinforce powerful, cultural tropes and even inscribe them into nature.²⁴ As a result, science fiction, which offers new storytelling possibilities untethered from current conditions, has been a productive feminist tool to break down binaries between objective scientific representations and storytelling. In *The Companion Species Manifesto* (2003) she explores the "significant otherness" of people's relationships with dogs, while in *When Species Meet* (2008) she expands her inquiry to a broader range of human-"critter" interactions. Haraway's work has been especially productive for the Nordic cyberfeminism movement in STS, which emphasizes the particular situatedness of the Nordic context for empirically-grounded research (Sveningsson Elm and Sundén, 2007). Haraway's overall project is to entangle the world of nature, people, and technology, to describe what new technologies make possible for those entanglements, and to interrogate the possibilities for caring relationships through the stories we tell. Care is also central to Karen Barad's work of agential realism: in *Meeting the Universe Halfway* (2007) she interrogates the perceptual apparatuses like microscopes that produce agential cuts for scientists' objects of interest and as a result impose particular entities into existence. For example, a biologist fixing and staining a cell

²⁴ The full title of this book is *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouseTM*, in which Haraway implicates gender, communication technology, biotechnology, science fiction, and scientific observation practices.

culture on a microscope slide, which makes the cell visible within that apparatus, creates a cell entity very different from the cells within their original context. Barad's politics of care ask us to be attentive to the worlds' entities, such that our experimental practices reflect nature's agency and not only our apparatus-driven inquiries. In turn, Barad's work has inspired research on the politics of care within feminist technoscience and "critical care practices" for STS researchers (Martin, Myers, and Viseu 2015, 636). I take up these concerns of feminist STS concerns, and in particular Haraway's nature/culture entanglements, at the end of Chapter 4 where I explore the consequences of different representations of nature on our possibilities for caring relations with animal subjects.

Explorations of the conceptual requirements of wild spaces often focus on their bounded or bordered status, as well as the cultural motivation of their meanings. This scholarship is particularly relevant to my analyses of the blue-chip genre, which generates a conceptual border between human viewers and a pristine wild. Hanson's history of American zoos situates them within a "middle ground between the wilderness and the city" (2002, 2) and suggests that the hybridity of its categories of wildness and domestication accounts for their neglect by historians. In Robert Kohler's history of the field sciences (2002), he explores field research as a similar borderland setting for naturalists. Julie Cruikshank, in *Do Glaciers Listen?* (2005) foregrounds the entanglement of natural and cultural history, with glaciers as a relational touchstone, particularly for aboriginal communities. She argues that these divergent interpretations of glaciers have real-life consequences with regard to environmentalism, biodiversity, global climate change, and indigenous rights. Cruikshank contends that "we become complicit in processes that make indigenous languages and narratives seem irrelevant to the modern world" (2005, 258) thanks to our normalized understanding of nature as pristine due at least in part to representations link blue-chip wildlife films. Nancy Stepan's *Picturing Tropical Nature* (2001) argues that the projection of nature is an imaginary construct rather than an empirical description, and that tropical nature has been used to oppose other forms of nature, for political, aesthetic, and scientific reasons. Richard Grove (2003) also examines colonial environmental experiences, focused on the use of local and indigenous knowledges within island and peninsular colonies to promote sustainability. He shows how the development of professional science in colonial contexts allowed institutional diffusion of state environmentalism. *New Natures*, a collection of essays edited by Dolly Jørgensen, Finn Arne Jørgensen, and Sara B. Pritchard, applies the tools and methods of Science & Technology Studies to ameliorate and interact with topics of concern in environmental history. I apply these

insights from this body of scholarship to the blue-chip renaissance, whose portrayal of a pristine nature is perhaps its most identifiable and enduring characteristic.²⁵

The Animal-Human Relationship

The recent cross-disciplinary field of animal studies approaches animal representation and the animal-human relationship, making central the moral implications and real-world effects of those relations.²⁶ The field of animal studies' theoretical orientation of animal life and human-animal relations informs my sustained interest in the figure of the recalcitrant animal. Filmmakers' solutions to the challenge of animals who "refuse" to perform specific behaviours while being filmed is a key driver of their professional identity. Nigel Rothfels' edited volume *Representing Animals* (2002) describe the many connections between the ways in which animals are represented and the human-animal relationship, exploring the historical settings of representation, different theoretical approaches to the animal object, and contemporary settings for the human representation of animals. Akira Mizuta Lippit's chapter "...From Wild Technology to Electric Animal" offers a new animal ontology whereby animals have no capacity for "being" thanks to their lack of language (and therefore, of subjectivity). According to Lippit, we have offered the filmed animal a mausoleum-like space to linger, to compensate for their real-life vanishing. This argument is related to John Berger's classic essay "Why Look at Animals?" in *About Looking* (1977), the foundational text of the field of animal studies, which described the loss of our meaningful, working relationships with animals, contrasted to the rise in animal representations and human-animal interactions in zoos. Davies has examined digital spaces such as archives as such loci of animal representation (1999; 2000c; 2005). *Knowing Animals* (2007), edited by Laurence Simmons and Philip Armstrong, explores the "animal turn" in humanities and social science research. A particularly creative essay in this collection is the contribution from Ricardo De Vos about what happens to animals after they are classified as extinct. Using the example of the thylacine, or Tasmanian tiger, De Vos shows that how we talk about, represent, and assign responsibility for extinction depends in no small part on cultural, historical, and social attitudes,

²⁵ Davies describes the pristine nature portrayed in blue-chip wildlife films in the following way: "It is 'nature in the raw', a nature without people, a nature in which the separation of culture and nature, humans and animals, is, for the main, absolute" (1998, 16).

²⁶ These approaches include anthropology, history, literary studies, art history, art appreciation, animal geography, and cultural studies.

which in turn influence the purportedly objective scientific accounts of species disappearance. The issues of extinction, pollution, and loss of habitat for wildlife are urgent problems that fuel criticism of blue-chip wildlife films' representation of pristine nature, which I describe in the next section.

Conservation and the Pristine Wild

The current Canadian broadcast documentary landscape for wildlife and environmental films, the setting in which my filmmaker interview subjects conduct their professional activities, depends on the specific history of environmentalism in Canada. Several institutional histories of the Canadian Wildlife Service (CWS) offer explanations linking the history of environmentalism and cultural appreciations of the animals in the construction of the Canadian "wild." J. Alexander Burnett (2003) follows the rise of environmentalism influencing the Canadian Wildlife Service's conservation aims and its move away from a focus on recreational land uses, as well as its impact of the rise in Canadian public appreciation for wildlife. The environmental mandate of the CWS was publicized through the *Hinterland Who's Who* series of short videos; through these public service announcements, Burnett sees a continuity between the early work of CWS pioneers and the later Canadian documentary landscape, including the environmental focus of the CBC's science and nature documentary program *The Nature of Things*.²⁷ Tina Loo's (2006) history of the CWS argues that conservation reflects human values with regard to human-animal relations. For Loo, "acknowledging that conservation has and should serve human interests would highlight the extent to which culture and nature are interconnected, and diminish the alienation that is the cause of so much environmental destruction" (2006, 214). This tradition of interconnectedness has been noted in Wilson's (1991) assessment of *The Nature of Things*' eschewal of representations of pristine nature.

The history of conservation, according to Lisa Mighetto (1991), has been fuelled by "animal storytellers" who influenced the public perception of animals, shaping our appreciation

²⁷ Wilson describes *The Nature of Things* as "humane investigative science journalism" that leaves out pristine landscapes:

Hosted by dissident geneticist and journalist David Suzuki since 1975, the show deftly combines science, natural history, and political culture. Its programs are consistently critical of the way science and popular aesthetics talk about nature. Its productions contain no majestic and unpeopled landscapes, no uncharted regions full of bounty. Instead the programs talk about nature in the full social, moral, and spiritual context of human history. (1991, 147)

for animals through narratives and not only facts. Mighetto's contention is supported by Stephen Kellert's empirical results that American respondents hold "a bedrock of affection and concern" for animals that is unmatched by any comparable accuracy in knowledge about animals (1989, 23). Recent examples of this type of conservation storytelling for lay audiences include *Last Chance to See* (1991), in which humourist Douglas Adams and biologist Mark Carwardine travel to protected areas for endangered species, emphasizing the arduous and at times seemingly arbitrary work of conservationists, and Jon Mooallem's *Wild Ones* in which he explains that arbitrariness through the notion of "conservation reliance": "from here on out, we will increasingly be forced to cultivate the species we want, in places we protect and police just for them, perpetually rejiggering some asymmetrical balance to keep each one from sliding into extinction. We are gardening the wilderness" (2013, 4).²⁸ The importance of story for wildlife film is a theme that emerged from my interviews with filmmakers in Chapter 3, and aligns my work with Kirby's (2011) assessment of the priority of story for partnerships between filmmakers and science consultants.

The conceptual segregation of humans from nature and the notion of a pristine wilderness has been the target of criticism for some conservationists. Vasant Saberwal, Mahesh Rangarajan, and Ashish Kothari's (2001) *People, Parks, and Wildlife* is an indictment of exclusionary approaches to conservation, where protected areas are meant to keep the wilderness in and everyone out. They argue that more flexible and inclusive conservation initiatives can better appeal to local needs, as opposed to unjust situations wherein "local communities are called upon to sacrifice a livelihood to ensure the spiritual and economic well-being of current and future city-dwelling generations" (2001, 3). They also see this ideology reflected in the pristine images of wilderness in nature programming and travel writing, which sustain "the myth of wild Africa" and ignore the role of local populations in maintaining its wildness (2001, 54). Nature writer Richard

²⁸ Another humourist, Dave Barry, described his efforts to remove a stubborn turtle from his lawn, leading to ecological musings. Barry proposed that ecological priorities should be limited to "those forms of life that are safe and non-disgusting" which include

- Cute, furry animals, such as seals and otters, that you see in Walt Disney nature movies, but never around your house.
- Large animals, such as elephants and boa constrictors, that live on other continents.
- Plants that produce flowers or eat insects.
- Turtles. (1987, 285-86)

Ironically, these same human-centred preferences are the target of the ire of critics of the nature-culture divide within conservation including Mooallem, who expresses frustration at the arbitrariness of our role as stewards of a wilderness we do not entirely understand (2013).

Mabey (2005) agrees that our conservation efforts amount to stewardship, which amounts to segregating humans from nature and controlling it:

The problem with stewardship is not the guaranteeing of our share, but the belief that we also have the right, or the duty, to determine every other species' share, too. The custodial relationship is intrinsically one of 'us' and 'them'. It assumes divisions, by power and importance, in a system that we know we must learn to see as a whole. However well-meaning, it allows back those authoritarian reflexes that are the root cause of the very ecological crises custodianship is trying to cure. (Mabey 2005, 109)

Sandra Harding (2008)'s *Sciences from Below* sees the same authoritarianism in "modernization" and "social progress" top-down initiatives that do not take local populations seriously. Conservation efforts should reflect this politicized complexity about the human populations they serve, especially local populations. One alternative that resists such top-down impulses is environmental historian Mark Hine's *Ground Truth: A Guide to Tracking Climate Change at Home* (2018). Hine's guide to the personal practice of phenology, the tracking of periodic natural events in local environments, aims to reconfigure our relationship to nature; he emphasizes personal, daily experiences, the value of record-keeping, and citizen science to transform our connection to the nature in our dooryards and not in a pristine elsewhere. These works motivate my assessment of the ideological commitments behind representations of pristine nature, as well as my preliminary investigation of the links between blue-chip wildlife films and conservation efforts. In particular, my case study of Cynthia Moses' INCEP *Gorilla* film project explores the consequences of filmmaking by and for local populations on conservation attitudes.

Conclusion

Wildlife films inhabit the borderlands within the conceptual disjunctions of entertainment-education, authenticity-artifice, and nature-culture. By drawing on the vibrant scholarship from multiple disciplines that has emerged in response to these long-held divisions, including the history and philosophy of science, science studies, documentary film theory, science communication, environmental history, and animal studies, my dissertation aims to present wildlife films in their multifaceted identity. Accordingly, in the chapters that follow I approach wildlife films as hybrid objects by employing a combination of methodologies including media ecology analyses, qualitative interviews, conceptual analyses, and case studies involving close readings of scenes from both blue-chip and making-of wildlife footage. Individually, these promiscuous tactics increase the points of access for my analysis of wildlife films; collectively and interactively, they

allow a holistic vision of wildlife films to emerge in their sometimes-messy hybridity. In this way, the following chapters can better illustrate wildlife films' contemporary portrayals of nature.

Chapter 2

Taking Spectacle Seriously: Wildlife Film and the Legacy of Natural History Display

Introduction: *Planet Earth* and the Blue-Chip Renaissance

When *Planet Earth* debuted on the BBC in 2006, it promised a comprehensive view of the Earth's ecosystems, from poles to jungles, mountains, caves, forests, deserts, and oceans. The first wildlife series to be filmed almost entirely in high-definition (HD), the crisp visuals of *Planet Earth* were enjoyed at home on HD flatscreen televisions, as well as in trendier locales like bars, not normally the domain of natural history documentaries (Palmer 2010).²⁹ It looked spectacular, with sweeping overhead views of running herds of animals on the savannah, jungle canopies, and mountain peaks, interspersed with close-ups of stunning behavior from individual animals, some of which had never before been caught on camera.³⁰ The series' eleven episodes achieved critical acclaim and financial success with coproduction partners such as the Discovery Channel, as well as through record-breaking sales on DVD. It was one of the most-watched wildlife programs to date; a third of the population of Britain watched one episode or more (Palmer 2010, 160), and it was eventually broadcast in 130 countries with a total audience of 100 million (Reuters 2008). It also anchored a series of feature-length wildlife films by the new Disney subsidiary Disneynature, starting with *Earth* (2009), a film edited mainly from footage of *Planet Earth* episodes into narrative arcs of animal families.³¹ And even though *Planet Earth* employed many familiar elements from earlier wildlife series, it left an indelible mark on the genre thanks to its scope and visual spectacle. Many natural history programs did not look the same after *Planet Earth*, while those that could not provide the same calibre of viewing experience suffered by comparison.

In this chapter, I use *Planet Earth* as a case study for how the blue-chip renaissance showcases nature's variety through unprecedented spectacle, achieved through innovative film technologies, new possibilities for home viewership thanks to the growing adoption of HD-capable flatscreen televisions, and a transformed broadcast landscape. I argue that despite a new and

²⁹ While the series was designed to be shot entirely in HD, it included "a few sequences on HD-friendly 35mm film" (Merli 2007).

³⁰ "Never before seen," "never before caught on film," and "TV firsts" descriptions of sequences play a significant role in the marketing and promotion of wildlife series. I will discuss this further in Chapter 5.

³¹ Headquartered in Paris, Disneynature produces, coproduces, or acquires wildlife film projects from other studios, and in 2012 initiated a pay-TV channel in France, Disney Nature TV, described as a "children's nature and documentary channel" (MAVISE 2013).

remarkable confluence of features, these nature films are undergirded by a deep continuity with older traditions in natural history display: namely, the use of spectacle to generate awe and wonder in viewers.³² As a result, reaction to the natural history spectacle of the blue-chip renaissance has inherited the same tensions about the proper balance for the entertaining and educational functions of natural history. Griffiths (2008) has shown that such anxieties reliably followed the various innovations in immersive spectatorship in museums, based on concerns that spectacle might overwhelm pedagogical aims. In a striking parallel, the same suspicions about museum spectacle are directly relevant in the domain of film. I begin this chapter by exploring how wildlife film theorists and documentary scholars have focused on the genre's educational functions and have targeted spectacle in particular as an impediment to education. In so doing, they have neglected these films' identity as entertainment and misunderstood the true purpose of spectacle, which I show to be central for both contemporary wildlife films and natural history more broadly.

Documentary Accuracy, Misrepresentation, and the Deficit Model

The blue-chip renaissance offers conventional natural history subject matter that falls within the category of the expository documentary, one of the form's traditional modes (Nichols 1991). Expository documentaries link film footage with voice-over narration, which is a primary characteristic of most wildlife filmmaking (Mills 2013). The footage acts as evidence for the narrator's descriptive exposition: in many cases wildlife filmmakers "are essentially seeking footage to *illustrate* preconceived ideas rather than to *reveal* something new" (Bousé 1998, 121 [emphasis in original]).³³ Nichols explained that expository documentaries "rely heavily on an informing logic carried by the spoken word" (2001, 107), and use narration to transmit information and elicit viewer trust:

[the] expository mode emphasizes the impression of objectivity and well-supported argument. The voice-over commentary seems literally 'above' the fray [...] The professional commentator's official tone, like the authoritative manner of news anchors and reporters, strives to build a sense of credibility from qualities such as distance, neutrality, disinterestedness, or omniscience. (2001, 107)

³² Anthony Nairn (2018) has demonstrated that the tradition of engendering awe and wonder operates as enchantment within the *Cosmos* science documentary series hosted by science communicators Carl Sagan (*Cosmos: A Personal Voyage*, 1980) and Neil DeGrasse Tyson (*Cosmos: A Spacetime Odyssey*, 2014).

³³ Nichols describes this practice as "evidentiary editing" (2001, 29-30).

The choice of narrator is important to attain such credibility. Typically, wildlife film narrators project what Weschler calls the “Voice of Institutional Authority” (1996, 101).³⁴ The omniscient-but-rarely-present narrators of blue-chip wildlife films offer a sober gravitas to the proceedings; the expository mode contributes to the familiar, conventional documentary “feel” and their perceived educational framework. This tone is in contrast to the more exciting one of the wildlife presenter format, in which energetic on-screen hosts such as Steve “The Crocodile Hunter” Irwin interact directly with animals.³⁵

One result of the expository mode is that wildlife film scholarship tends to treat these films as vehicles for the transmission of knowledge about wildlife, neglecting or downplaying their entertainment motivations.³⁶ Mainstream blue-chip wildlife films, especially those of the “British Style” (Bousé 1998) such as those produced by the BBC’s Natural History Unit, are generally interpreted as straightforward educational programs.³⁷ And within the well-documented history of artifice in historical and current wildlife filmmaking, much critical attention and scrutiny has focused on overt examples of anthropomorphism, scientific inaccuracy, misrepresentation, staging, or fakery in the history of wildlife films (Jeffries 2003; Bousé 1998; 2000; Chris 2006; Dingwall and Aldridge 2006; Palmer 2010; Mills 2013). Under such an interpretation, nature is considered to be misrepresented by unscrupulous or commercially-pressured filmmakers, who mislead audiences and undermine the educational project of wildlife documentary filmmaking. In other words, such critique of natural history documentary is both motivated by and tends to reinforce a clear distinction between entertainment and education.

Concerns about misrepresentation within wildlife film scholarship reveal assumptions of a deficit model of science communication, in which lay audiences obtain knowledge about wildlife by watching documentaries. The deficit model assumes that there is a gap in scientific knowledge between an uninformed public and scientific experts; under this view, knowledge is disseminated in popular representations of science, including wildlife films. As a result, accuracy is a key

³⁴ Weschler refers to this voice as “the same unctuous voice you’ve heard in every museum slide show or Acoustiguide tour or PBS nature special you’ve ever endured: the reassuringly measured voice of unassailable institutional authority” (1996, 15-16).

³⁵ See Palmer (2010, chap. 5) for an extensive discussion of the presenter-led wildlife format.

³⁶ For a distinct example of an alternative focus on wildlife filmmaking as a site for the production of knowledge; see Gouyon (2011a; 2011b; 2016).

³⁷ See Bullert (1997)’s assertion that science documentaries, being straightforwardly factual, are unproblematic to produce, pitch, and broadcast compared to other types of documentary.

criterion. Worries about unrepresentative, unrealistic, or false portrayals of nature, including a focus on overly-violent behaviour or on only a subset of social and sexual behaviours occurring in the wild, imply that filmmakers' staging or representational practices interfere with the informative goal of their productions. Critics portray wildlife films as presenting a reactionary or heteronormative natural world, one in line with particular views of human beings in which certain human values have been naturalized (see Bousé 2000; Chris 2006; Mills 2013). Wildlife films have also been accused of spreading misinformation about wild animals that can persist, such as the "myth of lemming suicide" perpetuated in the Disney True-Life Adventure film *White Wilderness* (1958) that involved a fabricated storyline culminating in a dramatic scene of lemmings leaping to their deaths (Woodford 2003).³⁸ These examples contribute to a suspicion that the entertainment contexts of wildlife filmmaking lead to misrepresentation (see especially Bousé 1998); commercial, non-informational features of the genre, including spectacle, are considered to put pressure on filmmakers and broadcasters, undermining scientific accuracy.

A distinct vein of criticism of blue-chip wildlife programming targets its support of an untenable conceptual divide between nature and culture. This divide has been sustained by the propagation of images of a purportedly pristine wilderness devoid of either human beings or discussions of the impacts of human activity on animal species and their environments.³⁹ Critiques along this line link concerns about accuracy with the blue-chip format's ideological motivations, and positions blue-chip wildlife films within the broader discussion within environmental history about the cultural construction of the Western concept of wilderness (see Cronon 1995). As a result, blue-chip films have been accused of downplaying urgent environmental messages and of failing to present the serious consequences of the anthropocene, allowing audiences to enjoy beautiful images of nature while engendering both a separation of human beings from the rest of

³⁸ This is by far the most notorious use of staging to demonstrate theoretically-consistent animal behaviour, which purported to show a scene of lemming suicide (Mitman 2009; Palmer 2010). The production, filmed in Alberta, acquired lemmings from children around Hudson's Bay; the animals were launched over a cliff by assistants using a turntable offscreen (*Cruel Camera* 1982). The film's narrator explains that the lemmings' instinctive, periodic suicides may seem mysterious, but they are actually migratory phenomena to control abundant populations facing shortages of food. The generated lemming behaviour in *White Wilderness* was in line with the theory of "lemming suicide" described by the narrator, and the footage popularized and perpetuated the so-called "lemming suicide myth" (Woodford 2003). The demonstration resulted in the deaths of many of the lemmings. Roy Disney apologized decades later for the widespread fakery in the *True-Life Adventures*, while "accurately not[ing] that they promoted 'awareness' of nature" (Williams 2010).

³⁹ In Chapter 4 I describe the blue-chip renaissance's portrayal of a pristine wilderness and its conceptual underpinnings.

nature and a sense of environmental complacency (Mabey 2005; MacDonald 2006; Austin 2007).⁴⁰ Some filmmakers dispute these claims by pointing to the beauty of wildlife programming as an inroad to enhancing viewers' admiration of nature (Palmer 2010); initial empirical results by Ivakhiv (2013, 211) from online reviews of *Planet Earth* support such an interpretation.

Whether (or the extent to which) blue-chip documentaries should discuss conservation issues is a heated topic in the wildlife filmmaking community, relating to questions of films' potential impacts on audiences' environmental attitudes. Nevertheless, some argue that their content is meant to be palatable to a broad audience, and broadcasters may not be interested in episodes that specifically engage with environmental issues or appear pessimistic (Richards 2013b). Some blue-chip wildlife programs produce episodes with explicit environmental messaging, such as the three-part *Planet Earth: The Future* (2006), but not all broadcasters elect to air them (Ivakhiv 2013, 210). Indeed, both of the above critiques run the risk of overlooking the "the political economy of documentary production" (Ivakhiv 2013, 204), since the visual tropes of blue-chip filmmaking are the result of their historical success within particular production and broadcast contexts. The blue-chip format has been profitable because it allows a program to be replayed in syndication, re-dubbed internationally, or reedited with other material and not appear dated (Cottle 2004; Mitman 2009). These benefits of amassing blue-chip stock footage were part of the founding aims of the BBC's Natural History Unit (Richards 2013a).

While these critiques illuminate representational, ethical, professional, and ideological issues relevant to wildlife filmmaking and its portrayal of animal life to the viewing public, the net effect is a disproportionate focus on films' accuracy and their educational role, which Richards has characterized as an "obsession with audience deception" (2014, 333) within wildlife film scholarship. For example, Dingwall and Aldridge point out the limitations of the deficit model, but nonetheless segregate wildlife documentary's entertainment and educational roles, treat the former as constraining the latter, and criticize blue-chip programming for not living up to its educational potential. They write dismissively that the blue-chip genre "should be better understood as a spectacle. Its economic and cultural constraints limit its capacity adequately to communicate the complexities of science" (2006, 147).⁴¹

⁴⁰ Palmer includes an anecdote where a wealthy potential donor told filmmaker Hardy Jones that "I watched *Blue Planet* last week and the oceans seem totally healthy [...] Why are we bothering to raise money?" (2010, 159).

⁴¹ While Dingwall and Aldridge refer to the communication of "textbook"-level evolutionary biology within natural history films, there are cases where more reciprocal interactions occur between scientific research and wildlife

Dingwall and Aldridge’s critique fits within a broader category of accuracy-based criticism of wildlife films. Kirby (2011) has argued, in the related domain of science consulting for feature films, that accuracy-based criticism obscures the complex co-constitution of education and entertainment within filmmaking. The scientific content within fiction films is not always accurate, but assessing films based on such inaccuracies overlooks how film writers and directors employ science, including the furthering of a required story arc, or offering plot-related plausibility.⁴² Science consultants’ responsibility is not only to improve the scientific accuracy of a film (although their collaborations may achieve this) but to offer their expertise to film directors in ways that enhance story, plot, and plausibility. In such cases, for Kirby, an over-focus on accuracy does a disservice to the actual role of popular films in science communication, including their prominent portrayal of the culture of science and their contribution to the “technoscientific imaginary that impacts what science means to the public” (2011, 229). Similar concerns have been expressed about the communication of science in nonfiction formats by Gouyon, who reminds historians of science to overcome the temptation to rely on any “self-evident distinction between entertainment and education” (2014, 245) within analyses of how science has been depicted on television. Gouyon is critical of work that positions entertainment considerations as external commercial mediations on otherwise educational scientific content; in a review of LaFollette’s history of science popularization on television (2013), Gouyon describes how the history of science has moved in the direction of more nuanced analyses of commercial forces. For both Gouyon and Kirby, the segregation of the contributions and aims of education and entertainment within sites of public science misunderstands the identity and character of public science and neglects the importance of entertainment as a context for the communication of science.

These insights apply especially to expository wildlife documentary films, whose entertainment motivations have been both downplayed by canonical treatment in documentary studies in general (Beattie 2008) and misunderstood by many wildlife film scholars as commercial constraints on an authentic portrayal of nature. Such concerns overlook how all documentarians

filmmaking, including the development of novel scientific findings from filmmakers’ observations or from the filmmaking process. I discuss this further in Chapters 4 and 5. I also explore science consultants’ relationship with film directors and the challenges of communicating scientific content in Chapter 3.

⁴² One of the examples Kirby employs is the science-fiction disaster film *The Core* (2003) whose plot involves a voyage to the centre of the Earth to restart the core’s rotation with nuclear weapons. Kirby explains that although the premise of the film is scientifically unrealistic, science consultants were employed to lend plausibility to a film in which a non-negotiable plot point is that the core of the Earth had stopped spinning (2011, 150).

intervene and construct images of nature, not only those employing overt misrepresentation (Winston 2000; Richards 2014; Gouyon 2016), as well as misunderstand the contemporary wildlife documentary broadcast landscape. The entertainment context for wildlife documentary film is not a superfluous constraint on accuracy, but essential to the genre's identity. What we need then is a more careful attention to the methods and history of entertainment and spectacle as part of a long-standing approach to natural history for the public.

To that end, and particularly in response to Dingwall and Aldridge (2006), I characterize spectacle as a key feature of wildlife film's blue-chip renaissance. Spectacle is not only a fortuitous result of better camera technology and higher budgets, merely enhancing entertainment value. On the contrary, spectacle has an important lineage in natural history display, where it has long served a central function in affective education about wildlife. In other words, spectacle offers a viewing experience that is not only didactic but emotional, aiming to generate experiences of awe and wonder that enhance learning by showing, and not only describing, nature.⁴³ Following Richards' (2013a) media ecology approach to wildlife filmmaking, relating the production, form, and content of media to new technologies, markets, and broadcaster institutions, I identify the features of the blue-chip renaissance contributing to its visual spectacle: technological innovations, high cost, and extensive coproduction partnerships. I then examine spectacle within older contexts of natural history display, in particular within museum settings, and illustrate the tensions surrounding the at-times uneasy balancing of entertainment and education. Situating wildlife film spectacle as a prominent contemporary iteration of natural history display undermines the deficit-model assumptions underlying wildlife film scholarship's focus on accuracy, and calls attention to the complex interactions between wildlife films' entertainment and educational mandates within the blue-chip renaissance.

New Technologies of the Spectacle

The history of wildlife filmmaking and natural history television involves many technological innovations aimed at solving the problems inherent in locating and filming animals

⁴³ A stunning example from recent wildlife filmmaking is *Microcosmos, Le peuple de l'herbe* (or *The People of the Grass*; 1996), which employed cutting-edge microphotography techniques to showcase the lives of common insects with minimal spoken exposition. The film contains only two narrated passages, to open and close the film. At the end of the first passage, narrator Kristin Scott Thomas urges the audience that "...to observe this world, we must fall silent now and listen to its murmurs." See MacDonald (2006).

in the wild.⁴⁴ Some of these involved the construction of specialized habitats or enclosures to facilitate viewing animals within their dens or nests, while others allowed for better underwater filmmaking (Cottle 2004; Mitman 2009; Palmer 2010; Gouyon 2016). The IMAX camera, used initially for films shown in museums and science centres, was employed for numerous natural history films and involved particular challenges based on its size and required filming conditions (Palmer 2010). And novel filming techniques, including time-lapse and microphotography, have made minuscule life visible, and thus led documentary film audiences to getting used to them as authentic pictures of nature (Scott 2003; Gouyon 2016). For the films and programs of the twenty-first century blue-chip renaissance, HD camera technology (which coincided with consumer trends in home HD television ownership) and specific camera mountings resulted in the visual language characteristic of the period's wildlife filmmaking.⁴⁵

Planet Earth (2006) was the first wildlife program to be shot almost entirely in HD, in then-untested field conditions of the extremely varied filming environments (Nicholson-Lord 2006). High-definition cameras offered a higher image resolution, as well as a better ability to film in lower light conditions (Bryant 2007). As a result, HD footage contained more detail and offered crisper images, even on large televisions (Palmer 2010, 160). Better lower-light shooting would also be a boon to filmmakers working in caves and forest undergrowth. Indeed, one sequence of note in the *Planet Earth* episode "Jungles," a frontal, close-up view of an entire bird-of-paradise courtship dance which included the female's scrutiny and ultimate rejection, was credited both to the filmmaker's incredible persistence and to the HD camera's low light requirements (Merli 2007).⁴⁶

But technical problems, up to and including equipment failure, were a major possibility, as the technology had never before been employed on such a wide scale in so many different venues

⁴⁴ In addition, autobiographies by wildlife filmmakers describe the practical and technical solutions to filming wildlife. See especially Palmer (2010).

⁴⁵ The success of *Planet Earth* spurred a continued interest in the production of big-budget wildlife documentaries. It was followed by another landmark series from the BBC Natural History Unit: *Life* (2009), a ten-episode series showcasing the adaptations employed in organisms' Darwinian struggle for survival. It coincided with the BBC's "Darwin Season" in the autumn of 2009, the 150th anniversary of the publication of *The Origin of Species*. *Life* was also shot in high-definition and featured high-profile narrators; its title is reminiscent of David Attenborough's other famed "life of" natural history landmark series from the 20th century (see Richards 2013a). Subsequent BBC series include *Life in Cold Blood* (2008), *Frozen Planet* (2011), *Life Story* (2014; a series which continued the trend of *Planet Earth*'s innovative filmmaking by shooting in ultra high-definition 4K with surround sound), and *The Hunt* (2015).

⁴⁶ According to the *Planet Earth Diaries* segment for the episode, cameraman Paul Stewart spent eight weeks (300 hours of filming) attempting to get this shot.

(Merli 2007). Previous BBC NHU series, including *The Blue Planet* (2001), faced barriers to filming entirely in HD, as described by then-technology development manager Andy King in an interview for *Broadcaster* magazine:

In a perfect world, that would be ideal, although HD video does not yet give us all the features of film. It's also not practical because of costs, the extensive use of SD archives in natural history programs, and the difficulty of getting all crews to shoot in the same format. Anybody want to pay for 40 crews to have HD cameras? (2002)

That same year, thanks in part to the success of *The Blue Planet*, the all-HD *Planet Earth* was commissioned (Nicholson-Lord 2006). *Planet Earth*'s executive producer at the Discovery Channel, Maureen Lemire, told *TVTechnology* magazine that: "A few years ago, high definition was still a new format for most camera operators, and back then there had been rumors that were not good about dealing with HD" (Merli 2007). Fortunately, the HD gamble paid off: the expensive equipment performed well in the field and yielded incredible footage.

Planet Earth further benefitted from a consumer television landscape with high demand for HD programming at the time of *Planet Earth*'s broadcast in 2006 and HD-DVD release in 2007. High-definition flatscreen LCD (liquid-crystal display) televisions were an ideal venue for the lush HD visuals of *Planet Earth*, and home ownership of HD-capable televisions was on the rise. As LCD technology improved, LCD flatscreen costs were decreasing compared to plasma screen alternatives.⁴⁷ By 2007, LCDs had outsold conventional cathode ray tube models and higher-end plasma and rear-projection TVs, with nearly 80 million LCD televisions sold worldwide that year, accounting for nearly half of global TV sales (Gruener 2008). Charles Bryant (2007) cites the *Hollywood Reporter*'s sales figures that by June 2007, a record-breaking 42,000 copies of the *Planet Earth* series on HD-DVD had been sold, corresponding to "one for every five owners of a high-def disc machine" (Arnold 2007) despite the box set costing more than the then-average cost of a HD-DVD player.

The most important innovation for the blue-chip renaissance's distinct visuals, starting with *Planet Earth* and continuing in the films and programs that followed, is the heligimbal stabilized helicopter camera mount, or "heligimbal," which allowed for long, extremely stable aerial shots (Bryant 2007; Palmer 2010). The mounting itself, manufactured by the Cineflex company, connects the camera to the "nose" of a helicopter, which would fly over an environment or animal

⁴⁷ Flatscreen televisions came in plasma and LCD options, but in 2006 it was easier for LCD flatscreens to offer HD resolution at sizes under 50 inches (Reuters 2006).

community. The gyroscopes within the heligimbal mean that the camera can maintain its orientation despite vibrational motion from the helicopter. Thanks to this gyro-stabilized activity in the mount, a camera can film steadily despite turbulence in the helicopter's path: overhead shots can be smooth and unbroken (Bryant 2007; Merli 2007).⁴⁸

Combined with a HD camera, the heligimbal made it possible to obtain crisp, high-resolution overhead images of animals. Footage obtained via helicopter in older wildlife series, like *Mutual of Omaha's Wild Kingdom*, requires a greater proximity to the animals. The effects of the helicopter's presence are evident in the footage, including grasses flattened by the propellers' wind or animals fleeing the pursuit. Film commentators remark that animal behavior is less likely to be disrupted by unobtrusive filmmaking techniques and equipment such as the heligimbal, cinebulle hot-air balloons (which allow for steady vertical climbs), and the infrared shooting at night employed in *Planet Earth* (Slenke 2007). Filmmakers also comment on the distinct benefits of the gimbal system:

"It was truly amazing to be able to suddenly film certain things from the HD aerial gimbal in a matter of days or weeks that would have taken perhaps years to film," said Huw Cordey, a veteran BBC producer who was responsible for three episodes in the series ("Caves," "Deserts," and "Jungles"). "Some of these sequences would never have been captured had we not been [shooting] from so far away and had our presence been known by the wildlife." (Merli 2007)

The benefits of unobtrusiveness are considerable: "The key to these technologies is in not disturbing the surrounding environment. A shot of the Amazon treetops bending and breaking from helicopter wind doesn't work. And what kind of behavior could we expect from animals if they knew they were being watched in the dark or from above?" (Bryant 2007).

The blue-chip renaissance is predicated on framing unobtrusiveness as authenticity. Broadcasters promote such authenticity by emphasizing how their films require extraordinary

⁴⁸ Other techniques and equipment were employed for aerial filming employed by the *Planet Earth* series. Cinebulle hot-air balloons allowed for steady vertical climbs in a variety of locations, key for difficult-to-access locations like sheer cliffs and forest canopies. Cinebulles are like regular hot-air balloons, except that their baskets have been replaced by camera platforms, sometimes with a pilot's seat. The balloon's rise lifts the cameras into the air. Its movement can be controlled by a fan, but strong winds can easily disrupt it. The technology was developed by pioneering cinematographer and balloonist Dany Cleyet-Marrel in the 1990s, and became more prominent in wildlife and documentary filmmaking over time (Bryant 2007). The combination of cinebulle and HD cameras meant *Planet Earth* could feature crisp aerial images of smooth vertical climbs and descents in tight forest and jungle canopies. Cinebulles are not as maneuverable as helicopters, and led to at least one crash during filming: "It's a quiet, noninvasive way to film wildlife, as long as you can control it - which proved difficult, as the contraption crashed into a baobab tree in Madagascar with 'Planet Earth' cameraman Warwick Sloss on board. Luckily, no one was hurt" (Boboltz 2015).

filmmakers on location and cutting-edge technological innovations. This promotional emphasis serves as a denial of the interventions of “natural history artifice” that have commonly been employed in the history of the genre. Behind-the-scenes footage which bears witness to non-interventionist filmmaking promotes a renewed stance of observational realism: a version of documentary film production in which the camera is pointed at something that happens in the world without the intervention or explicit direction by the filmmaker. Film scholar Corner describes observational realism as “a record of an ongoing, and at least partly media-independent, reality” that “is following developments beyond the control of the crew” (2015, 149), meaning that the filmmakers are not directly intervening to generate, distort, or misrepresent particular behaviour. Observational realism has been labeled an “unrealisable fantasy” (Bruzzi 2000, 180; see also Gouyon 2016) based on the necessity that all documentary is constructed; filmmakers cannot escape making decisions that shape their portrayal of the films’ subject matter (Winston 2000). However, recent wildlife film MODs operate to the contrary. Through their use of observational realism, they offer contextual evidence of filmmakers’ non-interventionist practices. By revealing wildlife films’ context of production in this way, MODs support a return to the animal-as-object for filmmakers (Chris 2006) and form a cornerstone of the blue-chip genre’s claim to authenticity.

A stunning scene shot during the caribou migration in northern Canada from the first episode, “From Pole to Pole,” epitomizes the level of spectacle and visual scale made possible by the heligimbal system. The scene begins tracking a pair of wolves, then gradually zooms out to include the entire stark landscape where the wolves have been reduced to mere specks at the bottom of the frame. Next, it cuts to an overhead view of a dozen or so caribou crossing a ledge, then another cut to an aerial shot of thousands, perhaps tens of thousands of migrating caribou skirting a lakeshore, who nonetheless remain individually distinct as the camera slowly rotates. These crisp aerial scenes are deployed in juxtaposition to close-up shots of the wolves and caribou as well as several time-lapse shots of the enormous migrating herd. The music includes a haunting woodwind melody for the caribou herd (evocative of a hunting horn), slow drumming to mimic the wolves’ footfall, and quickening strings as the tension mounts. Finally, the chase begins, filmed from both the air and at ground level: a group of caribou fan out pursued by one of the wolves. A calf gets separated from the rest and is pursued by the wolf; the zig-zag chase ends with the kill. The inclusion of such a scene of predation is commonplace in blue-chip wildlife filming; indeed,

it is similar to another wolf hunt from the BBC's *Life of Mammals* (2002). But in that earlier series, the chase shots are more static and truncated, unable to keep all the animals within the frame, while *Planet Earth's* chase scene includes impressive aerial shots over 10 seconds long. The heligimbal shots are integrated into the Natural History Unit's established repertoire of visual techniques, which now benefit from the crispness of high-definition cameras. The caribou hunt offers the viewer nature at once vast and intimate; the spectacle derives in part from the series' mastery of manipulating visual scale.⁴⁹ This footage affords the same visceral experience of immersion that Griffiths (2008) describes in her analysis of the spectatorship of the immense, wondrous spaces of panorama and IMAX screens. As Mitman describes in "Pachyderm Personalities," different visualization styles constitute animal subjects differently for their audiences (2005). The contrast in how the caribou hunt is portrayed these two series involves the prey caribou's transformation from an unlucky animal in *Life of Mammals* to an inconsequential individual within an immense, migrating herd in *Planet Earth*, observed by an all-seeing, dispassionate camera.

Spectacular imagery has a high price tag. The blue-chip renaissance is distinct for the return of high-budget wildlife filmmaking that helped make possible its spectacular visuals. Granted, the costs for blue-chip wildlife programming have always been higher than those for most other kinds of documentary, as sending filmmakers on location with uncertain outcomes was an expensive venture. In recent years, however, the industry saw greatly heightened production costs for feature films and unprecedented per-episode costs for wildlife television programs. *March of the Penguins* had a budget of \$8 million USD, while *Planet Earth* cost \$2 million USD per episode, \$25 million total for the series (Arnold 2007; Palmer 2010).⁵⁰ *Planet Earth* involved sending 70 filmmaker

⁴⁹ These high-definition, stabilized aerial scenes are ubiquitous in *Planet Earth*; other noteworthy examples include flyovers of the Argentine-Brazilian Iguazú falls with staggering tilts and pans; a long zoom out from nesting colonies of socotra cormorants until the frame includes the edge of the Arabian desert, and a fly-through of the Utah canyonlands at different elevations.

⁵⁰ *March of the Penguins'* estimated production budget was \$8 million USD, with domestic grosses of \$77 million USD (IMDB 2016; Box Office Mojo 2016). Billed as a "love story," the film followed the arduous process of emperor penguin courtship and parenting (Aguayo 2008). Before that, *Winged Migration* (2001), an independent documentary following the migratory patterns of birds, impressed viewers and critics with spectacular footage of birds on their extensive journeys around the world. The film employed innovative practices of acclimatizing semi-tame birds to the presence of filmmakers and aircraft (Gouyon 2016). Each of these films experienced unexpected financial success and critical acclaim, challenging the assumption that such films were only profitable on the small screen or in specialized venues, such as museums (Palmer 2010). Austin situates these box-office successes within a wider 21st-century "documentary 'boom'" (2007, 12). Moreover, the previous landmark series from the BBC's Natural History Unit, *The Blue Planet* (2001), consistently reached 30% of British viewers, motivating a continued focus on big-budget filmmaking (Nicholson-Lord 2006). As a result, these films and series should be considered relevant precursors to the blue-chip renaissance; they involve some, but not all, of the characteristics I draw on to describe *Planet Earth* and its successors as transforming our filmed vision of nature. While they have higher-than-expected budgets and employ

teams to 200 locations in 62 countries around the world over a 5-year span, with all the required crew, equipment, and logistical support for extended periods of remote work (Slenske 2007; Bryant 2007).⁵¹ Wildlife films shot on location depend on crews' ability to find and capture on film animal behavior that cannot be counted on or planned into a shooting schedule (Bryant 2007; Palmer 2010). The time and patience required for many of these shots depended in no small part on luck, as well as on producers' willingness to foot the bill for extended time on location. Indeed, Bryant (2007) outlines many stories of filmmakers fortuitously capturing footage of desired animals or behaviors in the last scheduled days or even hours of filmmaking, emphasizing luck, the capriciousness of nature, and the necessity for producers to accept large costs in order to achieve footage in the wild.⁵² In such broadcast climate, it was difficult for film producers to make money unless they first spent it, precisely to obtain the spectacular visuals.⁵³

The high cost of *Planet Earth* and later wildlife series was only possible for the BBC thanks to extensive coproduction agreements with media companies, including the Discovery Channel and the Disney corporation. Tamar Ashuri's ethnography of international documentary coproduction (2010) describes how documentary films increasingly rely on coproduction to fulfil producers' economic needs.⁵⁴ Coproducers will partially offset costs by obtaining distribution rights within their broadcast region. For large-scale documentary series of the BBC's Natural History Unit (NHU), which Richards describes as "mega-chip," the need to be attractive to

spectacular visuals, they do not depend on the same rhetoric of unobtrusive noninterventionist filmmaking, rely on MODs as evidence of production contexts, or have access to the same technological innovations or market contexts that fuelled *Planet Earth*'s prominence.

⁵¹ The Discovery Channel website even made the series' production apparatus the subject of its own interactive game, "Mission: Planet Earth," where players took on the role of centrally-located BBC producers, managing the finances and logistics for the many teams of filmmakers in the field (Bryant 2007). Davies focuses on the spatial dispersal of filmmakers in the construction of the BBC's vision of nature and argues that the BBC's NHU involves "situated knowledges [...] able to achieve their power over space [...] The located orderings of nature within the Natural History Unit are recursive processes, which are able to act at a distance through reconfiguring space" (1998, 34).

⁵² These lucky events include a break in cloud cover over Venezuela's Angel Falls; a mother polar bear and her cubs beginning their walk to the ocean; a jackpot of tree frogs in Costa Rica (thanks to information from a local); the entirety of an impala hunt by wild dogs in Botswana "in the final ten minutes of the shoot"; and a snow leopard hunt on mountainous terrain where "the crew set up their cameras one last time and was handsomely rewarded [...] all in the final hour of the final day" (Bryant 2007). Stories of such serendipity are common in accounts of wildlife filmmaking; see Palmer (2010) and Chapter 3 of this dissertation for more examples.

⁵³ In Chapter 3, interview transcripts with wildlife and environmental filmmakers reveal the resulting pressures on lower-budget and independent filmmakers within this documentary broadcast landscape.

⁵⁴ Despite its recent prominence, coproduction is not a new strategy. Richards argues that the BBC's NHU was set up to be appealing to international broadcasters. She includes interviews with David Attenborough who explained that coproduction money was not initially necessary to produce the BBC's landmark series, but it allowed for "beautiful cinematography" which would have otherwise been an extravagance for the public broadcaster (2013a, 149).

international coproducers resulted in a global branding strategy, the BBC NHU's Wildvision, which takes advantage of the NHU's in-house expertise and its archive of footage to meet international commercial requests (Richards 2013a, 150-51).⁵⁵ Davies argues that the NHU's archive of footage, including sounds and animal images, is "an invaluable resource" in generating revenue from coproduction partners in this way (1998, 18).

Such coproduction arrangements have contributed to the rise of a prolific new source of wildlife programming. In 2008 the Walt Disney Company founded a subsidiary, Disneynature, to produce and distribute nature and conservation documentaries. Beginning with *Earth* (2009), a feature-length film including reedited footage of several episodes of *Planet Earth* and focusing on the stories of the journeys of several animal families of several "charismatic" species including polar bears, elephants, and whales, Disneynature has released one or more films each year: *The Crimson Wing: Mystery of the Flamingos* (2008), *Oceans* (2010), *Wings of Life* (2011), *African Cats* (2011), *Chimpanzee* (2012), *Bears* (2014), *Monkey Kingdom* (2015) and *Born in China* (2017). With *Earth* and each subsequent Disneynature release, the company donated a percentage of funds from their opening weekend in theatres (generally timed to Earth Day) to environmental charities relevant to the films' subject matter, a marketable strategy resulting in favorable press coverage consistent with their "green," conservation-minded brand strategy. The films also share spectacular footage and visual style, as well as a focus on child-friendly narratives of animal families and a behind-the-scenes focus on the skill and patience of wildlife filmmakers, emphasized in trailers and promotional materials. Disneynature films also have high estimated budgets, which have parlayed into significant revenues, as they make up the majority of top-grossing nature documentaries to date (Box Office Mojo 2016) and their films have each made at least \$15 million USD (Alter 2015).

Alternatives to blue-chip wildlife programming in the 20th century proliferated in part because home viewership of blue-chip programs was not a commensurate experience to watching wildlife films in a theatre; blue-chip wildlife programming did not have the same capacity for spectacle on small screens. Even though purveyors of highly-rated forms of nature documentaries (including those with popular hosts, such as Steve "The Crocodile Hunter" Irwin) continued to

⁵⁵ "This new style of landmark wildlife programming, which has been dubbed 'mega-chip' programming by industry insiders because of the huge budgets necessary to obtain ever more spectacular footage, emphasizes the 'multiplicity' of wildlife content, or the ease with which it can be repackaged for different markets or modified for use across a range of multi-platform media" (Richards 2013a, 153).

offer new televised programming, it did not have the same capacity for sheer visual impact and achieved spectacle in part by emphasizing the physical danger faced by the hosts or the “never before seen” features caught on film. As Scott (2003) summarized, small home screens required achieving spectacle in other ways, by catching audience attention and emotionally enlisting them into the show, whether it be through exciting storylines or human presenters in danger.⁵⁶ Scott has argued that spectacle, defined as “images that produce a visceral response in the viewer by way of the sheer audacity of the image itself [...] to excite wonderment in an audience” (2003, 30), has also been achieved through the use of computer-generated images (CGI) to recreate dinosaurs in the natural historical programs *Walking with Dinosaurs* (1999) and *Extinct* (2000).⁵⁷ Scott’s treatment of spectacle did not foresee the blue-chip renaissance, which was able to leverage the broadcast and consumer landscape to offer visual spectacle not only in theatrical releases but also for home viewership. Filmmakers were able to generate awe and wonder from conventional natural history subject matter thanks to technical innovations that took advantage of better cameras and larger television screens. At the same time, the increasingly-large budgets allowed the time to shoot in ways that enhanced the resulting visual spectacle. Indeed, the success of *Planet Earth* led the BBC away from its reliance on CGI, and demonstrated that viewer-attracting spectacle could be achieved without it: according to the BBC’s Martin Davidson, “After Planet Earth, people expect you to be there. CGI is no longer the kind of gift it used to be” (Holmwood 2006).

The more traditional subject matter of blue-chip wildlife documentaries, filmed so as to maximize visual impact, meant that filmmakers could forgo the inducements to spectacle like CGI which would previously have been required on the small screen. The blue-chip renaissance is also the result of trends that had been gradually developing within the wildlife genre. Coproduction money, for example, had been used as early as the 1970s to enhance the visuals of *Life on Earth* and “contributed to the spectacular cinematography that has since become a consummate part of the BBC’s landmark wildlife series” (Richards 2013a, 149). It was only the combination of the

⁵⁶ As reality TV proliferated in television more generally, a budgetary “race to the bottom” resulted in lower-cost programming with smaller audiences (Ellis 2005). Some wildlife programming took on the format of a reality TV program; *Meerkat Manor* on Animal Planet followed the (named) individual members of a meerkat colony and described their relationships and shifting allegiances with soap-operatic melodrama. Although situations capturing human beings and wild animals are generally controlled, wild conditions can be dangerous to presenters, resulting in serious injuries and even death. Palmer, a wildlife filmmaker himself, describes the most serious cases of injuries to filmmakers, and includes his criticism of those who took the unnecessary risk of getting too close to wild animals (2010).

⁵⁷ Van Dijk (2006) has described how these spectacular effects are nonetheless grounded in documentary realism.

BBC's cinematography and the wide availability of large-screen televisions for home use that allowed the sustained phenomenon of popular blue-chip television programming to take advantage of new possibilities for the viewers' experience. Thanks to HD cameras, the heligimbal apparatus, high budgets, and extensive coproduction partnerships, the wildlife genre can now offer content of unprecedented spectacle.

The remarkable visual showcasing of nature within contemporary blue-chip wildlife filmmaking, described in the previous section, depended on cutting-edge 21st-century film innovations. Yet these wildlife films draw on forms of spectacle that long predate cinema. Generating wondrous experiences for viewers by means of visual spectacle has been a central aim of the multiple settings of natural history display, from illustrations to collections to the museum, a primary site for public natural history since the 19th century. The spectacular footage present in contemporary wildlife filmmaking is continuous with these traditional forms of visual natural history, each designed in order to elicit wonder and awe, and reiterate longstanding trends in visual reasoning, collection, and display. We need to consider the idea of spectacle historically for two reasons. First, these relevant precursors illuminate the primacy of spectacle within the traditionally-understood educational settings of natural history. Secondly, considerations of wildlife film spectacle, including its deficit-model assumptions, point to a much older discourse over the proper role of spectacle in public settings of education about nature. This longer view links tensions within contemporary wildlife filmmaking to the essential character of public natural history.

In the next part of the chapter I argue that natural history spectacle of contemporary blue-chip wildlife filmmaking is bound up with the discipline's observational and display traditions, which are central features of natural history. First, I will describe the importance of the visual element of the observation of natural specimens, as well as the aesthetic character of images and specimens, for natural history research and collections. I will then describe the tradition of natural history collecting and display, from cabinets of curiosity to modern natural history museums, and their spectacular displays through the professionalization of exhibitors. The spectacular images present in contemporary wildlife filmmaking are tied to these traditional forms of visual natural history, each designed to elicit wonder and awe from affected viewers; they are the culmination of longstanding trends in visual reasoning, collection, and display that have long been of interest to historians of natural history.

Visual Knowledge in Natural History: Spectacle and the Truth to Nature Debates

The field of natural history has an impressive pedigree, with sources from antiquity onwards describing the living world. The domain of interest of natural history has not been consistent: its scope has included organisms, natural objects, medicine, astronomy, mineralogy, and superstition.⁵⁸ Today's practitioners do not share a common definition. Indeed, a recent oral history project bringing together natural historians revealed a diversity of views about the scope and aims of the discipline (Drummond and Steele 2016). Natural history has encompassed the planet's nonliving things as well, meaning that its objects of interest span animal, vegetable, and mineral. It has also included geological formations and geography.⁵⁹ Generally, it has consisted in the study of living things and natural objects within their environmental communities, as well as an interest (developing especially from the eighteenth century onwards) in changes to living things and geological formations over time; in other words, it is the history of nature. Natural history has been described as primarily observational, involving the description and visual presentation of specimens' appearance, anatomy, and morphology, as well as visual descriptions of landmarks and environments. The latter were especially important as descriptive evidence of the landscapes visited through scientific voyages (Stafford 1984). But natural history has also been an experimental field, studying germination and hybridization as a precursor to the more recent fields of genetics and molecular biology. In addition, it is a field wherein the collection and display of images and specimens has been significant, for pedagogic purposes, for public education, or to display the owner's wealth and discernment. The history of natural history draws from as well as benefits contemporary interest in biodiversity, art history, and environmental concerns (Jardine, Secord, and Spary 1996).

⁵⁸ The prominent example from antiquity is Pliny the Elder's *Natural History*.

⁵⁹ The etymology of the term "natural history" does not necessarily refer to the discipline of history. Wildlife biologist Steven Herman describes the confusion in the following way:

And then there is the problem with the parent term itself: Natural History. Where does the "history" enter into the identification of birds or the preparation of a small mammal skin? The term "life history" is a little easier to understand, but it is still somewhat awkward.

It turns out that the history in natural history has little or nothing to do with history as we commonly conceive and use the term, i.e., something to do with the past. It turns out that "history" in this application has an archaic definition (Oxford English Dictionary). When the term was coined, "history" meant "description" (i.e., "systematic account"). Viewed in this context, everything fits; natural history is a description of nature. (2002, 933)

Natural history museums have reflected this broad interest and heterogeneity.⁶⁰ Like their precursor cabinets of curiosity, natural history museums often included non-organismal material, from minerals and gemstones to man-made artefacts of anthropological interest from other cultures, including pottery, textiles, coins, clothing, and jewelry (Denton 1991). In addition, ethnographic cinema was a popular attraction at museums in the early 1900s, while worries over its balance of spectacle and education challenged anthropologists and curators (Rony 1996; Griffiths 2002). As many specimens were obtained from colonial territories, natural history collections have long been considered part of imperialist projects, with the rise of national museums of natural history in capital European cities corresponding with imperialist expansion in the eighteenth and nineteenth centuries (Sheets-Pyenson 1988; Fortey 2008; Snell and Tucker 2003; Thorsen, Rader, and Dodd 2013).⁶¹

The visual character of natural history is not only the result of its prominent display and collecting practices; observation was also central to research and pedagogy. Natural history's observational aspects supported research by allowing the standardized communication of specimens' visual features, which was essential for classification and taxonomic efforts (Asma 2001). After World War II, the rise of more "scientific" biological sciences of molecular biology and, later, genetics, involved these fields' attempts to distinguish themselves through their more systematic and theoretical approaches, compared to the "mere stamp collecting" undertaken by natural history (Johnson 2007).⁶² Recent scholarship has undermined both this stereotype and the centrality of natural history's observation practices by focusing uncovering experimental practices which place both within large museum and botanical garden settings as well as within local investigative contexts (Müller-Wille and Rheinberger 2012; Terrall 2011).

Natural history is generally considered to have an aesthetic character, meaning that it encompasses not only the study of nature, but also the appreciation of its beauty (Herman 2003,

⁶⁰ Living animals have also been displayed alongside preserved specimens in various natural history museum contexts (Thorsen, Rader, and Dodd 2013; Rader 2013; Rader and Cain 2014).

⁶¹ Some, including Mabey (2005), Chris (2006) and filmmaker Cynthia Moses, consider blue-chip wildlife films aimed at Western audiences to be an extension of this imperialist attitude. I describe Moses' alternative film education project in the Conclusion of this dissertation. Mabey critiques the desire to catalogue and represent wildlife in these films as a kind of dominating representation, which requires instead an acknowledgement of human interconnectivity. For Mabey, this preferred alternative is a rejection of our sense of dominion and corresponds to McKibben's proposed "more humble" way of life (1989).

⁶² The quotation "All science is either physics or stamp collecting" (including slight variations) is attributed to Rutherford. "Stamp collecting" has long been used as a term of disparagement for classificatory sciences (Johnson 2007).

938).⁶³ Artists were employed by natural historians in the illustration of specimens (see especially Daston and Galison 2007) and as early as the Middle Ages, collections of specimens by natural historians were a source of scholarly material and prestigious display. The cabinet of curiosities, a quintessential locale of Renaissance courtly scholarship, brought together natural materials and cultural artefacts from far-off places (Daston and Park 1998). Scientific voyages were a source of specimens which elicited wonder at the variety and difference found in exotic locations (Stafford 1984; Polakowski 1987; Mason 2009; Bleichmar 2011); indeed, botanical and animal specimens from South America were instrumental in the construction of Victorian concepts of “the tropical,” particularly the vivid colours and lush foliage of South American plants (Stepan 2001). Similarly, Elizabeth Hope Chang (2010) describes how Chinese garden design and artefact exhibition afforded a British interpretation of Chinese aesthetic experience, in turn motivating orientalism in representations of the East. Often highly prized and valuable, botanical specimens showcased the wealth and taste of their owners; the Dutch tulip craze embodied the desire to display one’s conspicuous taste and discernment for beautiful objects (Cook 2007). Botanical gardens containing colonial specimens were important for scientific as well as symbolic discourse, as travel to tropical colonies afforded utopian discourses and environmental epistemologies of colonial lands (Stepan 2001).

The cabinet of curiosity, generally considered to be the precursor to the natural history museum (Findlen 1994; Daston and Park 1998; Yanni 1999), was meant to produce a visual spectacle and aesthetic experience. Daston and Katharine Park describe them as “theaters in which old and new relationships between art and nature played off against one another, symbolized in the objects and their physical arrangement” (1998, 265). Such juxtaposition was especially acute when manmade artifacts were placed alongside natural ones, or when natural materials were carved into artistic forms. The visual impact of such a densely-packed area containing such a variety of exotic items was part of the cabinet’s appeal: items were suspended from walls and ceilings, mounted in frames, and arranged in drawers and on other furniture (Findlen 1994). The cabinets were crammed, often literally, with material not generally accessible to the viewing public

⁶³ Wildlife biologist Steven Herman offers the following definition: “Natural history is the scientific study of plants and animals in their natural environments. It is concerned with levels of organization from the individual organism to the ecosystem, and stresses identification, life history, distribution, abundance, and inter-relationships. It often and appropriately includes an esthetic component” (2002, 934). For Herman, the “esthetic aspect of natural history” relates to an appreciation of the beauty inherent in nature and of the conservation value of rare species (2002, 938).

and idiosyncratically arranged and categorized (Daston and Park 1998; Yanni 1999).⁶⁴ The collection's patrons, whether wealthy individuals or prestigious institutions, showcase their ability to travel to obtain specimens from remote locations and to house them in opulent surroundings. Daston and Park describe how wealthy collectors' cabinets "shared at least one important function, namely to display the prince's magnificence and taste before foreign dignitaries and potentates" (1998, 266).⁶⁵ This function continued during the establishment of national and imperial natural history museums, which also served as displays of prestige.

There is equally a long tradition of concerns over the interplay between aesthetics and authenticity of natural historical images and specimens. Daston and Galison (2007) devote a substantial portion of their history of scientific objectivity to the working relationship between naturalists and scientific illustrators employed in the production of images for natural history atlases. The diversity of natural specimens had to be overcome by the scientists' assertive interventions with the goal of "reveal[ing] the true image of nature" (2007, 322). One aspect of this intervention was governing the artist who produced the image itself; this relationship involved a "four-eyed sight" wherein "atlas makers had to impose their specialized vision on their artists" (2007, 82). Under such a view, artists could not be relied upon to overcome the temptation of the specimen's appearance and see the universal category beneath. For Daston and Galison, the naturalist-artist relationship epitomized "truth to nature," a mode of scientific objectivity wherein accuracy in depicting the relevant features of a species required naturalists to know which characteristics of an individual specimen were accidental and which were universal. This knowledge depended upon the accumulated wisdom and experienced judgement of scientific

⁶⁴ Daston and Park describe the plentiful arrangement of items in limited space in these cabinets:

The strategy of display piled one exception upon another, provocatively subverting or straddling the boundaries of familiar categories. [...] Not only did individual objects subvert commonplaces or shatter categories; from every nook and cranny uncountable rarities clamored simultaneously for attention. The cabinets paid visual tribute to the variety and plenitude of nature, albeit very partially sampled. Stuffed with singularities, they astonished by copiousness as well as by oddity. Collectors did not savor paradoxes and surprises, they piled them high in overflowing cupboards and hung them from the walls and ceilings. The wonder they aimed at by the profusion of these heterogeneous particulars was neither contemplatives nor inquiring, but rather dumbstruck. (1998, 273)

Catalogues were equally idiosyncratic. For example, the catalogue to the Tradescant cabinet collection, available in the Thomas Fisher Rare Book Library, University of Toronto, refers to the following subset of "Birds and their eggs": Emu egg, Crocodile egg, Turkish eggs, including dragon eggs, and Easter eggs (Tradescant 1656). Wider categories (such as man-made vs natural or realistic vs. fantastic) were not as relevant in this collection as their grouping under the "egg" category.

⁶⁵ Natural historians' collections were also spectacular, although "their ostentation tended to be that of learning rather than of wealth" (Daston and Park 1998, 267).

“sages” to ensure that images reflected the ideal types of nature and not the idiosyncratic characteristics of any particular specimens or the misguided sensibilities of the artists employed to illustrate specimens. Naturalists operating under truth-to-nature “interven[ed] in every stage of the image-making process to ‘correct’ nature’s imperfect specimens” (2007, 42). These issues of appropriate intervention will need our attention in Chapter 3 as we discuss filmmakers’ attitudes to questions of realism, staging, and fakery in their practices.

Aesthetics and public reception are key themes in the history of natural historical spectatorship, which were explored specifically in the edited collection *Models: The Third Dimension of Science* (de Chadevarian and Hopwood 2004). Sustained debates have occurred throughout the development of natural history exhibition over the aesthetic and entertainment values of natural historical models being obstacles to their veracity and educational merit; James Secord (2004) specifically examines the dinosaur models at the Crystal Palace exhibition, while natural history group displays’ reflection of cultural and representational contexts have been of interest to scholars including Lynn Nyhart (2004; 2009) and Haraway (1984).⁶⁶ The aesthetics of natural historical models, achieved through collaborations between artists and scientists, can be situated more broadly within greater visual culture, which has a role in changing trends in the appearance and arrangement of exhibited specimens (Jordanova 2004; Kemp 2006). As a result, in contrast to “animals as they really are” we encounter “representations of animals as they really are for the producers of the representations themselves [...] fail[ing] to escape their socio-historical context” which applies not only to exhibited specimens but to the history of scientific knowledge-making more broadly (Thorsen, Rader, and Dodd 2013, 4-5). This conflict between authenticity and aesthetics is well-described in literature on natural history museums (Jardine, Secord, and Spary 1996; Mitman 2009; Asma 2001; Chicone and Kissel 2014; Bates 1992; Rader and Cain 2014). Some interpret the natural history museum as an institution under tension, thanks to commercial pressures on research space in museums and the lack of wider interest in research taxonomy (Secord 1996), while others stress the interdependence of research and curation, suggesting that successful museums benefit from the interplay between top-tier research and the design of beautiful exhibitions (see especially Fortey 2008; Thackray and Press 2013).

⁶⁶ Secord (2004) also sees the Crystal Palace models as an appropriate starting point for tracing the public’s dinomania, which has had lasting effects on trends in natural history museums. See also Whitehead and Keats (1981), Shelton (1991), Yanni (1999), Chicone and Kissel (2014), and Rader and Cain (2014). For the tensions between authenticity and spectacle within institutional natural history settings, see especially Mitman (2009).

Finally, both the research methodologies and objects of interest within natural history are expressly visual, resulting in research practices which grapple with visuality. Stephen Asma (2001) describes how:

Biology and its subject progenitors [...] have always sought to condense information into image formats, but, more important, they have always had uniquely visual subject matters. Whether one is talking about cladograms, microscopy images, or anatomical maps, the learning of life science is largely visual. (2001, 244).

And while visual representation is relevant for the display of specimens, the research of natural history was not exempt from the domain of the visual. Kusukawa argues that illustrated anatomical and medico-botanical manuscripts consisted in a new argument for the study of nature, as images made a transition to evidence in a new form of “pictorial argument” (2012, 227) within the work of Fuchs, Gessner, and Vesalius, wherein the “skillful combination of text and image led to the creation of a generalized object of study” (3).⁶⁷ Such generalized, idealized, or “type” specimens all depend on such visual argumentation, and play prominent roles in natural history research (Whitehead and Keats 1981; Daston and Galison 2007; Mason 2009; Thorsen, Rader, and Dodd 2013, Fortey 2008). Daniela Bleichmar emphasizes that for eighteenth-century naturalists, “images provided an entry point into the exploration of nature, functioned as a key instrument for producing knowledge, and constituted the foremost result of natural investigations (2011, 385). Visual arguments were also central to debates within natural history, and Smith contends that the illustrations in Darwin’s natural history publications, including *The Origin of Species*, serve a similar argumentative role to those described by Kusukawa: “virtually every one serves more than a merely ‘illustrative’ purpose” and that in general, “Visual materials have important roles to play in scientific argument,” which explains the historical effort and expense required to include illustrations (Smith 2006, 9, 33). Unfamiliar specimens were prized for their exotic features, and through the circulation of images, natural history has made an extensive contribution to scientific visual culture (Stepan 2001; Smith 2006; Mason 2009).

The visual and aesthetic character of natural history has long been central to its epistemological claims, and any discussion of spectacle in contemporary wildlife films joins these

⁶⁷ Kusukawa emphasizes that the images within these texts are neither peripheral nor dispensable: “Such pictures were not frivolous or indulgent additions to texts that were the sole and self-sufficient bearers of arguments. Texts worked in tandem with pictures to produce a powerful form of argument—a visual argument, encompassing both demonstration and persuasion” (2012, 250-51). Illustrated books allowed the text and image to combine as a “visual argument” (2012, 25).

older debates about truth-making. But the question of (and concerns about) spectacle within the blue-chip renaissance engages more particularly with a related concern about spectacle's intended effects on audiences as well. Fortunately, to understand contemporary natural history spectacle in wildlife films, we can draw from discussions by historians articulating how spectacle has been both prioritized and criticized within museum specimens, exhibitions, and dioramas. Natural history display thus becomes the key to understanding the value of spectacle within the blue-chip renaissance.

Display, Exhibition, and Spectacle as Public Knowledge

Display is intrinsic to the field of natural history. Specimens sourced from remote locations, the prestige of collections of rare animal bodies, and institutional sites such as museums and cabinets of curiosities, all depended upon peer and spectators' appreciation of displayed items. While other branches of science have employed spectacle in the public demonstration of scientific effects, many of natural history's settings have been largely public, highly visual, and display-based (Fortey 2008; Bates 1992; Chicone and Kissel 2014; Asma 2001).⁶⁸ Natural history also involved the circulation of images of organisms which were created to showcase their physical characteristics, whether emphasizing individual differences of particular specimens of interest, or those aiming to illustrate an idealized type (Daston and Galison 2007; Kusukawa 2012; Smith 2006; Yanni 1999). Models were also a significant aspect of natural history, for both pedagogical or display purposes (Jardine, Secord, and Spary 1996); the beauty and craftsmanship of individual models often rivalled the work of artisans of decorative objects.⁶⁹

The transformation of the natural history exhibition from being one among many tasks of museum research curators to their exclusive specialty coincided with an enhanced focus on spectacular displays. Rader and Cain (2014) describe the rise of the "New Museum Idea" of prioritizing display over taxonomic research that would come to prominence over the course of the 19th and 20th centuries for American natural history museums. This transformation led to no little conflict between research curators and a rising profession of museum exhibitors: "research staff continued to malign what they saw as a direct challenge to scientific scholarship" (Bates

⁶⁸ See especially Morus' (1998) discussion of the achievement of spectacular electrical effects.

⁶⁹ A particularly striking example is the Ware Collection of Blaschka Glass Models of plants, on display at the Harvard Museum of Natural History, described in Daston (2004).

1992). However, Richard Fortey reminds detractors of exhibition that museums have always been the site of spectacular displays (2008, 292-93).⁷⁰ Moreover, the deep interdependence of research and display means that any division between these categories is not clear-cut; while the interests of museum researchers and display exhibitors may appear to be in conflict, they are in fact thoroughly interwoven and aligned (Thackray and Press 2013). In addition, thanks to rising costs and decreased government funding for museums, exhibition is a key source of support for museum researchers, requiring spectacular exhibits that consistently draw crowds (Rader and Cain 2014; Fortey 2008; Thackray and Press 2013).

The natural history museum is the most common setting for the display of natural history collections from the nineteenth century onwards. The aesthetic and architectural features of natural history museums, many dating from the Victorian period (including marble columns, echoing spaces, and large rooms), have been described as “cathedral-like” and were intended to convey the sobriety and authority of science as the new religion (Sheets-Pyenson 1988; Snell and Tucker 2003; Fortey 2008).⁷¹ The architecture and space of the natural history museum setting is designed to inspire “awe and reverence” in visitors (Asma 2001, 265; also DeMars 1991).⁷² Natural history museums’ architecture, building design, spatial arrangements, glass, lighting, and display paraphernalia themselves have been of interest to scholars concerned with the museums’ material contexts, situated needs, and impacts on pedagogy and display (Yanni 1999; Sheets-Pyenson 1988; Griffiths 2008; Brenna 2013).

⁷⁰ Fortey, longtime trilobite researcher at the Natural History Museum in London, offers a nuanced voice in this dispute, suggesting that opposition to the prominence of exhibition requires a longer view:

For the public, the exhibitions are there to give a show, and to inform. During my working life they have changed from being worthy and didactic to become ‘attractions’—a choice among many available in London. Those who decry such changes should remember that when the okapi was first displayed people would travel especially to London to see a single mounted animal. This has always been a function of museums—they are the place to show off a worthwhile spectacle. (2008, 292-93)

⁷¹ The pastiche Museum of Jurassic Technology, in California, employs the trappings of a natural history museum while subverting its seriousness with exhibitions combining genuine and fraudulent natural history material. Despite this playful approach to natural history, Yanni (1999) interprets the Museum of Jurassic Technology as being on the same “truth seeking continuum” as traditional natural history museums. For more on the Museum of Jurassic Technology, see Weschler (1995).

⁷² Asma (2001) describes this as the “museum as temple” experience, potentially leading the visitor to “meditation, inquiry, and wonder” (2001, 265). Fortey opines that “Naturally, museums came to resemble their classical ancestors, as shown so blatantly at be-columned Bloomsbury [site of the British Museum], and a dozen other similar establishments around the world” (2008, 293).

Visiting a natural history museum was meant to be an affective experience, with learning tied to curiosity, engagement, and diversion (Asma 2001; Chicone and Kissel 2014).⁷³ The arrangement and display of collections of specimens had particular motivations, from packed cases demonstrating the ordered taxonomy of nature (Yanni 1999) to the showcasing of ecological and family relationships in dioramas (Rader and Cain 2014). Displays that combine aesthetic and scientific features resulted in spectacular, inspirational experiences (Asma 2001). In addition to these functions of museum design, the individual specimens on display were also meant to impress viewers and elicit wonder.⁷⁴ Encountering genuine natural history objects is considered to generate a feeling of “wonder and awe” (Bates 1992, 15).⁷⁵ The exhibition of large specimens in particular created spectacle: “‘star’ attractions with sufficient ‘wow’ factor to draw in the public” (Thackray and Press 2013, 61) or “magnificent” specimens which exemplified their species (Rader and Cain 2014). Charlotte Porter has described how the generation of these effects in viewers were foundational to the entire enterprise of natural history museums: “[t]he sense of wonder and beauty that natural history inspires has traditionally motivated collections and justified the expense and consequences of their exhibition” (1991, 233).

My overview of spectacle’s role within natural history display enhances our analysis of contemporary wildlife films. First of all, it grounds the inquiry of spectacle within a broader historical and disciplinary context: natural history has always worked to inspire awe and wonder for the viewers of displayed illustrations and specimens. Next, it situates concerns about the potential constraining effects of wildlife films’ entertainment context within a much older conversation about the proper balance of education and enjoyment within natural history. The importance of spectacle within wildlife films’ relevant precursors motivate a more nuanced assessment than those of wildlife film scholars who have interpreted the genre’s entertainment context as the source of external pressures to entertain or, like Dingwall and Aldridge (2006),

⁷³ Museums’ treatment of historical and anticipated visitors is especially helpful here. For example, Davis (1996) describes the usefulness of museum audience studies to measure the effectiveness of environmental education in natural history museums. Davis sees a particular institutional role for natural history museums in conservation and public environmentalism, in that museums already have the needed strengths of taxonomic expertise and a history of fieldwork needed to monitor biodiversity.

⁷⁴ Many popular museum displays are actually models, for reasons of preservation, security, or the unavailability of genuine specimens. Chicone and Kissel (2014) stress that viewer trust depends on a transparent labeling of specimens such that there is no doubt whether any are reproductions. This relates directly to debates over staging in wildlife filmmaking, which I explore further explored in Chapter 5.

⁷⁵ DeMars describes this experience as “a communion with the real objects” (1991, 132), reminiscent of Benjamin’s treatment of the “aura” of singular works of art.

criticize spectacular blue-chip films for not fulfilling their educational potential. Indeed, thanks to natural history's largely visual and aesthetic character, it is difficult to draw any firm distinction between the discipline's display, pedagogical, and research aims, complicating attempts to segregate those functions. Spectacle's aim of generating wondrous experiences cannot be entirely circumscribed within natural history's public face; instead, spectacle has been intrinsic to natural history's representations of nature. As a result, while Dingwall and Aldridge claim that blue-chip wildlife films "should be better understood as a spectacle" (2006, 147), I counter that appreciating spectacle offers us a better understanding of wildlife films. This insight has begun to be applied by documentary film scholars interested in affective education, and is helpful in analyzing spectacle's contemporary effects in the blue-chip genre.

Spectacle as Affective Knowing in Wildlife Film

Acknowledging the underestimation of spectacle's central role in natural history display and the historical tensions related to its use is a productive jumping-off point for considering spectacle's contemporary function. Although I have described several proximate contributors to contemporary wildlife film spectacle within the blue-chip renaissance, including camera technology, market characteristics, high budgets, and co-production agreements, focus on these factors without the broader historical context of spectacle's role within natural history display risks positioning spectacle as a recent, optional, or external feature of wildlife films. Display in natural history was oriented towards inspiring awe and wonder in visitors. Spectacular wildlife documentary films have that same function, although it has been understudied for wildlife films in particular and documentary films in general. In this section, I will describe spectacle's role within documentary display and affective education to illustrate how spectacle operates to blend the entertaining and educational roles of wildlife documentary film.

There are a few documentary film scholars who trouble distinctions between informative and entertaining modes of the genre, and for whom spectacle has a central role not only in generating emotional experiences of awe and wonder, but in knowledge dissemination. Cowie (2011) focuses on what she deems the paradox at the heart of the documentary mode: a distinction between the pleasure of spectacle (scopophilia) and the educational project of nonfiction film (epistemophilia). For Cowie, spectacle is not a showy veneer over informative content, but characteristic of documentary as an art form, within which "the pleasures of looking" intersect

with and even facilitate access to knowledge (Cowie 2011, 3). Beattie (2008) argues that the spectacular in documentary films has been under-theorized and neglected within more prominent treatment of documentary representation, which is a primarily epistemological framing of the content-viewer relationship including the canonical works of both Grierson and Nichols (1991). For Beattie, a distinct lineage of spectacle has been neglected in favour of a focus on documentary representation. An overemphasis on the didactic qualities of documentary (its informative role, as well as its sobriety and seriousness) has resulted in a neglect of its affective, spectacular, and pleasurable qualities, those which Beattie defines collectively as documentary display, or “showing” as opposed to “telling.”

In contrast to informational content transmitted didactically in expository documentaries, documentary display allows for knowledge through sensation, emotion, and affective ways of knowing. For Beattie, not only does documentary display displace discourses of sobriety for those of pleasure, it also has its own way of conveying knowledge. Beattie sees a distinct lineage of attraction and spectacle that have been neglected while film studies has dealt instead with issues of representation: Grierson for the most part excluded aesthetics from his studies of documentary, while Nichols is disparaging of the pleasurable aspects of documentary. A key site of early examples for Beattie is the cinema of attractions. For example, the filmed arrival of a train, from the point-of-view of someone about to be run over, was such an embodied experience that tales abound of spectators fleeing their seats based on their experience of the approaching locomotive.⁷⁶ Beattie claimed that natural science documentaries could involve documentary display in that they deploy scopic technologies to generate spectacular and immersive visual experiences. In particular, Painlevé’s aquatic microcinema and IMAX cameras’ image enlargement share in “a technologically-enhanced revelatory ‘showing’ [which] reveals previously unseen worlds” and offers new forms of immersive understanding (Beattie 2008, 150).

Documentary spectacle's ability to provide an environment for affective education motivates a reassessment of the education/entertainment distinction within wildlife films. Natural history films embody scopic pleasures through their spectacular imagery, none more so than the recent wildlife films and series of the blue-chip renaissance. Conventional definitions of spectacle refer to visually striking performances, or of the visual impact of an event. Such definitions are

⁷⁶ This phenomenon is perhaps apocryphal; see Loiperdinger and Elzer (2004).

relational, in that they describe a relationship between the performance, display, or event itself, and the way in which viewers are affected by that display. Spectacle within the wildlife film genre involves the primarily visual elements of a film that are employed to generate a sense of awe, wonder, or astonishment at the natural world.⁷⁷ Spectacular wildlife films leave their viewers in awe of the footage of nature they create.⁷⁸ Footage of nature can enthrall viewers: shots of vertical climbs can produce vertigo, while flyovers of animal herds can be breathtaking. The embodied, affective pleasures of viewership abound in the spectacles of the blue-chip renaissance, by way of the crisp resolution and visual splendour of footage, particularly of aerial footage of animals and environments.

In addition, wildlife film spectacle involves generating a sense (reinforced by narration, publicity materials, and behind-the-scenes footage) that animal life is being revealed to viewers in ways not normally accessible to the general public. For example, footage of a rare snow leopard in episode 2, “Mountains,” of *Planet Earth*, is enjoyable for its pure visual impact, but even more so as a narrator describes how it is the first time this species has been caught on film. The *Planet Earth Diaries* segment for the episode details the filmmakers’ arduous efforts to capture this footage over three years, enhancing its “never before seen” status for the series. As a result, a secondary quality of wildlife film spectacle is related to the documentary form itself, wherein the astonished viewer wonders how such visually striking footage was achieved. This secondary level of spectacle is not necessarily subsequent to the spectacular viewing experience; an extreme close-up elicits immediate questions of the “how did they do that?” variety.⁷⁹ For Griffiths, viewers’ immersion in visual spectacle promotes a “‘revered gaze,’ a response marked as much by recognition of the labor and effort involved in creating the spectacle as in the spectacle itself”

⁷⁷ Although not exclusively: aural elements such as recorded sounds from nature can be spectacular. An especially-striking example is that of the courtship display of the bird of paradise from *Planet Earth*; whose close-up framing is accompanied by intense clicks and sounds of his mating call. Sound effects mimicking or supplementing the footage are common but often undetectable to untrained viewers (Palmer 2010) and can contribute to spectacle such that they ought not be considered distinct. I would also contend that music can be a component of the spectacular display, as music is carefully chosen to complement and evoke particular feelings within audiences.

⁷⁸ Much like the effects of the Kantian sublime. While for Kant the experience and sheer power and scale of natural environments is the source of sublime feelings, representations of nature, as well as manmade or “technological sublime” experiences can also generate wonderment (Nye 1994). For Nye, the experience of the sublime itself has a history.

⁷⁹ See Chapter 3 and 5 for further discussions of the relation between transparency, filmmaker disclosure, and authenticity.

(2008, 286), and these experiences are combined within the revered gaze's mode of immersed looking.

The “revered gaze” fits within Beattie’s assessment of documentary display: spectacle affords new ways of knowing not only about nature but also about wildlife film production. These elements of contemporary wildlife film viewership are particularly relevant to the broader issues of filmmaker transparency, technological determinism, and documentary realism juxtaposed within recent wildlife documentaries’ enhanced use of “making-of” material. As Griffiths’ analysis of the “revered gaze” (2008) indicates, spectacle is linked to both the visual impact of footage and to viewers’ appreciation of how a shot was filmed; the latter condition is made increasingly possible thanks to the prominence of behind-the-scenes material demonstrating and celebrating wildlife films’ cinematic achievements. Such “making-of” material makes public the practical and technical conditions of wildlife film production to an unprecedented degree thanks to DVD bonus features, series’ companion websites, and even as segments broadcast alongside the main program (such as the *Planet Earth Diaries*). As the filmmaker protagonists of these “making-of” segments demonstrate both their remarkable persistence and their facility employing technological innovations needed to capture footage of nature in a spectacular way, viewers are invited to “celebrate the expansion of the human colonization of the world through technology” (Ivakhiv 2013, 211). In this way, blue-chip programs have maintained their spectacular depictions of pristine environments while promoting the authenticity of their footage, thanks to the contextual evidence of filmmakers at work on location under difficult conditions. The situation serves as a reminder of the relevance of Wilder’s challenge to historians that each new context of photographic technology requires us to ask, “what is *this* photographic method (good) for?” (2011, 352; emphasis in original). At this stage, it is worth considering how constructions of authenticity within the blue-chip renaissance are rooted in older technologies of film and photography.

Authenticity in Photography and Documentary

The behind-the-scenes footage within MODs affords different evidence to viewers of wildlife films than do their “parent” programs, which may contain staging despite appearing authentic. By revealing details of their films’ production practices, they offer contextual evidence that a shot was filmed in a non-interventionist way (although it is certainly true that MODs could also contain staged scenes). Concerns that awareness of the authenticity of film depends upon

factors not contained within that film footage are related to similar concerns expressed throughout the history of photography about the medium's objectivity and ability to portray reality. Even though the camera came to be an instrument trusted to investigate the natural world scientifically (Winston 1993, 41-42), the initial use of photographic evidence emerged within debates over photography's manipulability and uncertain suitability to disseminate scientific authority (Tucker 2013). The characteristics of photography's visual medium were such that elements other than what a picture is a picture *of* had consequences for the image produced.

The combination of the indexicality and craftsmanship involved in photography mean there have been sustained debates over the nature of photographs, their truth claims, and viewers' interpretations. Siegfried Kracauer's *Theory of Film* argues that the image of a photograph is the result of a compromise between the physical object photographed and the photographer's craft, between physical reality and photographer's ability (1960). In Rudolf Arnheim's "On the Nature of Photography," he emphasized that knowledge of the mechanical origin of a photograph affects the viewer's experience in terms of the image's connection to the world being depicted. For photographs to make sense they ought to be understood as an encounter between "man and world," where physical reality grounds man's creative expression, which in turn elevates and transforms the world (Arnheim 1974, 156, 159). Relevant to this issue are aspects of pre-photographic viewership. Jonathan Crary, in *Techniques of the Observer*, conceptualizes the viewing subject of pre-photographic representations, one "who is both the historical product and the site of certain practices, techniques, institutions, and procedures of subjectification" (1990, 5). For Crary, an observer is more than a viewer, but "more importantly one who sees within a prescribed set of possibilities, one who is embedded in a system of conventions and limitations" (1990, 6) that require shifts under distinct conditions of visibility to new techniques of observing. These aspects of the medium of photography and the historically-bound observer are applicable to documentary film: footage produced by multiple images retains the man-world connection and the connotations of faithful mechanical production, as well as rules for its viewers to follow, especially as sub-genres of documentary developed their own conventions, with varying commitments to indexicality and the objective approach to documentary subject matter.⁸⁰

⁸⁰ Documentary scholar Nichols' canonical taxonomy of documentary's modes (poetic, expository, observational, interactive, and reflexive) from his *Introduction to Documentary* (2001) have influenced much research in film studies, including efforts to elaborate, reject, or modify the set of modes. See for example De Bromhead (1996).

Commensurate concerns about the authenticity of documentary subject matter are well-tread in recent documentary theory. During the rise of “reality-TV” programming, the boundary between factual and fictional television was under pressure, culminating in what John Ellis (2005) described as the “Crisis of 1999” across British documentary television. This crisis was a short-lived but highly-publicized period of anxiety surrounding substantiated allegations of inauthenticity on documentary television, including such diverse examples as fakery in wildlife films, a fabricated documentary about the drug trade, and a “docuswap” wherein a couple pretended to be father and daughter in order to appear on television. For Ellis, documentary has never been able to offer a straightforward, objective representation of reality, but instead has always been “slippery,” involving a 3-sided negotiation between viewers’ beliefs, media institutions’ practices, and filmmakers’ aspirations. The short-lived crisis was overdetermined thanks to both the reality-TV format’s production practices (including low cost, quick turnaround, ease of editing, and highly dramatized narration) as well as the self-reinforcing role of media attention on the examples of fakery. Ellis contends that analysis of this crisis required a twofold exploration of violated trust: filmmakers had been tricked by people assuming false identities in order to appear on a television program, and viewers were disappointed by the undue artifice in the construction of documentary programming (Ellis 2005). The crisis resulted in enhanced transparency efforts throughout British reality and documentary programming; the production and prominence of wildlife film MODs are one example of such transparency, while tightening broadcaster standards (as well as enhanced publicity calling viewers’ attention to those standards) are another (BBC 2008).

The representational claims of various documentary modes are also germane to this debate. Photography in general, and film footage in particular, cannot act as a guarantor of its own authenticity, thanks to film’s ability to misrepresent the context of what is depicted on screen. These worries are enhanced by concerns about the manipulability of digital filmmaking, which has the ability to edit the content of footage (Palmer 2010; Scott 2003; van Dijck 2006). The rise of celebrations of unobtrusive and unbelievably patient nature photography can be interpreted as a response to these concerns.⁸¹

⁸¹ Alan McFadyen is a remarkable example. His photograph of a kingfisher’s vertical dive, complete with the bird’s totally-symmetrical reflection, requiring the photographer’s patience throughout “an obsessive quest for the perfect shot, a quest McFadyen estimates took some 4,200 hours and 720,000 exposures [...] He set the camera at a low angle near the water and waited in a camouflaged blind for the bird to appear, getting the shot with a remote shutter release.” (Mallonee 2016). Another recent example is photographer Louis-Marie Preau, known for his in-focus picture of a beaver swimming underwater and carrying a poplar branch. “[I]t took him four years to successfully capture this

Spectacular imagery within the blue-chip renaissance which prompts affective knowing depends on and reinforces these historical and technical contexts of viewership. Scott points out that notions of “authentic” representations of wildlife have evolved alongside the use of new techniques, such as time-lapse photography which was developed in the 1910s and is now common in wildlife programming:

Over the course of time, these new technologies have influenced what viewers are willing to accept as being authentic in the context of representations of the natural world. Time-lapse or slow-motion sequences, infrared or heat-sensitive imaging, the extreme close-ups of macrophotography—all of these have become accepted means of portraying the reality of the plant and animal kingdoms, even though they show aspects of nature that would not normally be visible to the naked eye. (Scott 2003, 31)

Landmark series such as David Attenborough’s *Private Life of Plants* (1995) successfully employed these techniques to offer “a privileged, almost voyeuristic, glimpse of worlds that would normally remain hidden” (Scott 2003, 31). Within the blue-chip renaissance, technical achievements and the lengths to which filmmakers must go to obtain never-before-seen animal behavior is similarly promoted in publicity materials and is prominent in the making-of-documentaries that accompany the programs. HD camerawork, aerial footage, super-slow-motion, time-lapse filming, and composite CGI footage from space, have all joined the genre’s kit of techniques aimed at offering authentic footage of wildlife, and are increasingly removed from anything an individual observer would encounter in the wild.⁸²

Conclusion

The spectacular trends of the blue-chip renaissance are slated to continue. A sequel to *Planet Earth*, originally titled *One Planet* but later retitled *Planet Earth II*, premiered in 2016 from the BBC Natural History Unit with international co-production (Barraclough 2016). Netflix announced in 2015 that it will produce *Our Planet*, a wildlife documentary series by the *Planet Earth* production team Silverback Films, for planned availability on the streaming service in 2019. *Our Planet* “promises to present never-before-filmed settings, ranging from the ice caps and deep

intimate scene. Each evening, wearing snorkeling gear and weights, he would lie motionless on the riverbed for two to three hours. Finally, one evening, his patience paid off” (bioGraphic 2016).

⁸² CGI was used to incorporate satellite images into the program’s footage. For example, for a sequence showing the melting Arctic tundra from orbit, the BBC’s *Planet Earth* website describes how, “Taken at intervals of several weeks, a short sequence of still satellite images is blended together to show change over a much larger timescale” (BBC 2009).

ocean to deserts and remote forests, featuring some of the world's rarest animals and most precious natural habitats," in part thanks to a partnership with the World Wildlife Fund, which will allow filmmakers privileged access to their protected areas around the world (Spangler 2015). The promotional materials and marketing of these anticipated series lean heavily on the earlier success of *Planet Earth* and their planned spectacular footage, to be achieved through ever-increasing camera technologies and filmmaker persistence.

I have shown how the blue-chip renaissance's technological innovations and market contexts contributed to a new and successful venue for spectacular visions of wildlife. Similar to its role in natural history display, spectacle works to generate awe and wonder in wildlife film viewers and to provide an affective educational experience. As a result, it contributes to the virtuous inter-reinforcement of entertainment and education at work in contemporary blue-chip wildlife films, undermining the deficit-model assumptions about documentary's informative function. In a broadcast landscape within which wildlife filmmakers have "the authority to speak for nature" (Gouyon 2011a, 26), we need not only to assess wildlife documentary's accuracy or representational commitments, but to appreciate its complexity as a cultural product and resonance with historical forms of nature on display.

Spectacle is key in the history of natural history, and that practitioners within that field had spectacular display as a central aim. The blue-chip renaissance's technological innovations and market contexts, which were in no way guarantors for success ahead of the rigorous and uncertain conditions of wildlife filmmaking, nevertheless contributed to a new and successful venue for natural history spectacle, one which shares the aim of generating viewers awe-struck by wondrous images of nature. As a result, contemporary wildlife filmmaking is subject to the same debates as natural history at large over practitioners' responsibilities regarding authenticity and staging, the conceptual frameworks and epistemic stances inherent in representations of nature, and the role of transparency in divulging constructions of animal specimens. These three topics will be dealt with in the chapters that follow, based respectively on filmmaker interviews, conceptual analysis, and an analysis of authenticating strategies, to describe the many facets of wildlife filmmaking and its natural history context.

Chapter 3

“Filmmaking is a process of constructing a story”: Staging, Storytelling, and Documentary Practice

Introduction

*As the executive producer [of *Wolves*], I gave many speeches after film screenings. But when people who admired the film asked how we obtained certain shots, I felt awkward and embarrassed. “How did you film the mother wolf in its den?” I was often asked. I didn’t want to admit that many of the scenes involved captive wolves, nor was I eager to reveal that the “den” where the mother wolf suckled her newborn pups was a manufactured set. If I exposed such trade secrets people might feel cheated.*

Nevertheless, I came clean, doing my best to explain why we had decided to work with captive wolves in a controlled setting. In the film credits, we disclosed this fact, but most people hadn’t noticed the disclosure; each time I gave this speech I could tell the audience felt disappointed. (Palmer 2010, 108)

Perhaps no one more than Chris Palmer understands the extent to which revelations of staging can impact wildlife filmmakers whose films purport to show footage of wild animals. Palmer, a prolific conservation filmmaker whose work in wildlife and environmental filmmaking spanned decades, was embroiled in controversy when it came to light that his IMAX film *Wolves* (1997) employed rented animals from the game farm *Animals of Montana*. Palmer’s subsequent tell-all professional autobiography *Shooting in the Wild* describes how he regrets the episode despite his having included the source of the tame wolves in the film’s credits, and has changed his mind about the acceptability of game farms (Palmer 2010, 108-09).⁸³ Remorsefully, Palmer includes details from multiple episodes over his long career in which he violated what he now considers to be the informal professional ethics of his trade.⁸⁴ In that vein, he is especially critical

⁸³ The credits to *Wolves* read: “Sections of this film were made possible by employing captive wolves. This reduces stress on wild populations that would otherwise be affected by prolonged or intrusive filming requirements. No animals were harmed during the production of this film” (Palmer 2010, 109). For more details on this episode, see the CBC documentary *Cruel Camera* (2008) produced and directed by Bob McKeown for *The Fifth Estate*. Palmer’s book joined other writing by wildlife filmmakers who have described their professional experiences, including BBC Natural History Unit producer Jeffery Boswall’s “The Moral Pivots of Wildlife Filmmaking” (1997), wildlife filmmaker James Gray’s *Snarl for the Camera: Tales of a Wildlife Cameraman* (2002), and wildlife filmmaker Nick Gordon’s *In the Heart of the Amazon* (2002).

⁸⁴ Palmer aims to codify these informal ethics into a set of best practices acceptable to working filmmakers and audiences. In this vein, he concludes the book with an 8-point plan to reform wildlife films: “1. Start with a statement of intent. 2. Work closely with reputable scientists. 3. Make conservation films that entertain. 4. Use new media effectively. 5. Disclose how the film was made and establish an ethics ranking system. 6. Practice green filmmaking. 7. Diversify the wildlife filmmaking community. 8. Improve ethics training and guidelines” (2010, 182). He promotes this goal in both his writing and his teaching in environmental filmmaking at the American University.

of filmmakers who commit what he considers to be professional and ethical lapses, including filmmakers who have mistreated animals (by filming too closely, disrupting natural behaviours, or directly handling wild animals), employed enclosures, filmed in zoos, rented tame animals, sensationalized animal behaviour with inaccurate narratives, or edited footage into “nature porn and fang TV” (Palmer 2010, 145). These are practices Palmer considers to be staging, or “making something ‘natural’ happen artificially for the benefit of the camera” (2010, 103).

Even high-profile filmmakers with long-running television series have been accused of serious fakery and staging of animal behaviour, including Marlin Perkins, host of *Mutual of Omaha’s Wild Kingdom*, the pioneering staple of Sunday evening wildlife programming from 1963 through the 1980s. The show at times employed staged confrontations and tame animals for Perkins and his team to “rescue,” although Perkins never admitted to or discussed the show’s fakery (Palmer 2010, 43). Allegedly, when asked by *Fifth Estate* documentary reporter Bob McKeown in 1982 whether any of the footage from *Wild Kingdom* was faked, “the octogenarian Perkins firmly asked that the camera be turned off, then punched a shocked McKeown in the face” (*The Fifth Estate* 2008).⁸⁵ Clearly, accusations of staging nature involve large stakes for filmmaker reputability.

In this chapter, I explore staging in wildlife filmmaking to show how it relates to the professional identity of contemporary documentary filmmakers. The history of wildlife filmmaking, like that of the discipline of natural history itself, is one of tension between authenticity and artifice in the display of nature. The filmmakers I interviewed articulated the continued relevance of this tension in their professional lives, as well as varying degrees of adherence to the historical norms of scientific observation. How do these issues play out in contemporary documentary filmmaking? How do working filmmakers understand their experiences filming nature, and what can their attitudes tell us about their professional self-image, and of the role and significance of staging within their profession?

⁸⁵ Palmer describes Perkins as “full of contradictions”: “Despite critics such as McKeown, Perkins always saw himself as ethical. He remained convinced that anything he did that someone might construe as unethical was more than offset by the educational benefits of his shows” (2010, 43). Palmer also describes allegations that after complaints emerged that McKeown’s *Cruel Camera* did not have the proper permissions to include *Wild Kingdom* footage, the documentary was never again shown in the United States. Unauthorized versions of *Cruel Camera* remain available online (for example, it is viewable at <https://www.youtube.com/watch?v=e8BOonwugTs&t=1466s>; the segment involving *Wild Kingdom* is from 15:58-17:38).

Wildlife filmmakers are especially vulnerable to accusations of staging thanks to the legacy of the epistemological and evidentiary claims that have historically been employed within the genre. And many times over, wildlife films and series proved unable to live up to the explicit assertions of authenticity in their portrayals of nature, such as Disney's *True-Life Adventure* films claim of being "completely authentic, unstaged and unrehearsed" (Mitman 2009, 110). Criticisms over a lack of disclosure and transparency over filming practices have surrounded even the most eminent and high-profile of wildlife filmmakers.⁸⁶ Recent blue-chip series produced by David Attenborough for the BBC's Natural History Unit have had to defend their use of a zoo cobra having been brought to a wild location or the undisclosed filming of a polar bear birth in a specially-constructed enclosure within a zoo (Cauchi 2008; Watson 2011). Complicating the situation is the reality that definitions of acceptable filming behaviour are not held in common by working filmmakers; the informal professional ethics Palmer describes are aspirational, as they are currently neither codified nor enforced by any governing association (2010, 182).⁸⁷ And while several scholarly treatments of wildlife filmmaking focusing on "natural history artifice" within the wildlife genre (elements of staging or fakery designed to produce specific behaviours desired by filmmakers), on the whole this body of work is fixated on the accuracy of wildlife footage to the point of being an "obsession with audience deception" which overlooks the ways in which all documentary films are necessarily constructions, according to wildlife media scholar Richards (2014, 333) and which I described in the previous chapter.⁸⁸ Missing from the discussion are working filmmakers' voices and experiences, for whom the reality of capturing footage of wildlife is not necessarily a black-and-white issue of accuracy or ethics, but one closer to Palmer's "trade secrets."

⁸⁶ The recent prominence of behind-the-scenes footage, making-of documentaries (MODs), and explanations of filmmaking practices accompanying wildlife films and series is in part a response to this criticism. I explore this further in Chapter 5.

⁸⁷ In email correspondence to Palmer, Marty Stouffer, a longtime wildlife filmmaker who faced media accusations of staging and animal cruelty in the 1990s, pointed to the lack of any such clear standards:

Who is it that's in charge of such matters? Where are the rules and regulations written down and published, and who is it that will enforce them for all of society? Those answers are not at all clear to me, and, therefore, there is no such standard to which I have ascribed. Of course, I am bound by all of the various laws of my town, state, and country. But, as for ethical guidance, I have no compulsion to be controlled by any rules other than my own personal beliefs and philosophies" (Palmer 2010, 122).

⁸⁸ Richards draws on documentary theorist Winston (2000), who argues that all documentarians' filmmaking results in constructed images of their subject matter, regardless of the level of overt intervention or misrepresentation involved.

As noted by Gouyon (2011), and as I discussed in Chapter 2, much of the scholarship on natural history programming has tended to focus on the ways in which scientists' work has been misrepresented, including examining the techniques of artifice within the history of the genre, cataloguing how animal behaviour is made to correspond to preconceived social norms, or criticizing the outright fakery of animal behaviour. Such approaches tend to consider wildlife programming to be inauthentic based on the extent to which the commercial forces of film production interfere with or mediate audiences' access to real nature by requiring footage to conform to a particular audience-friendly story. But in addition to positing a clear distinction between commercial, educational, and scientific aims of hybrid scientific products, this view mistakenly positions storytelling as a constraint which acts to misrepresent animal behaviour, rather than as the means and opportunity to make a wildlife film in the first place.⁸⁹ Conversely, Kirby's (2011) account of science consultants on fiction film projects emphasized how their work is ultimately in service to the story, and that accuracy-based criticism of the scientific content of films misunderstands the purpose of science consultant collaborations. For Kirby, our examination of scientific content in public entertainment, like that of wildlife filmmaking, needs to take its role as storytelling seriously and is diminished when reduced to fact-checking.

Drawing from qualitative interviews, I aim to add working documentary filmmakers' attitudes and practices to these conversations about staging and story.⁹⁰ Based on their responses during our conversations, three main themes emerged: first, that staging is generally considered a shortcut to achieve authenticity, despite there being no commonly-held definition of what specific practices count as staging for working filmmakers; second, that the issue of staging is highly relevant to reputation and professional self-identity for filmmakers for which the topics of audience trust and the inclusion of disclaimers are especially germane; and third, the central aim of wildlife documentary filmmaking is to tell an entertaining story that will engage audiences, wherein staging practices are tools selectively employed to achieve that aim. Documentary filmmakers see themselves as storytelling under the constraints of difficult or even hostile environments and under particular budgetary and logistical conditions. For those working on wildlife films or environmental films that include animal footage, these difficulties are compounded by the

⁸⁹ Work in science studies and in the history of science has increasingly demonstrated that attempts to segregate commercial, educational, and scientific aims of hybrid scientific products to be problematic if not impossible: see Shapin (2008); Morus (2014); Kirby (2011) as well as discussion by Gouyon (2014).

⁹⁰ See the Introduction of this dissertation for a full methodological description of my qualitative interview process.

recalcitrance of animal subjects whose behaviours are to be captured on film. Thus, these filmmakers are required to craft stories based on the unreliable animal subjects of their films, and their various staging practices (or explicit eschewal thereof) are their responses to that unreliability. Those responses are determined in part by production contexts and professional self-identity. In this way, the tension between authenticity and artifice is worked out in a range of practices within which filmmakers reproduce relations between observer and nature with varying adherence to norms of observation, transparency, and non-intervention. These concerns support the endurance of the persona of the scientific observer of nature, that “virtuoso observer, open-eyed and open minded, attentive, and preternaturally patient” (Daston and Lunbeck 2011, 115) and offer a contemporary iteration of the continuing relevance of observation, which Daston has characterized as being “everywhere and nowhere in the history and philosophy of science” (2008, 97).⁹¹ In addition, for Haraway (1988), observers’ situated judgements are linked to a responsibility for those judgements; this responsibility undergirds wildlife filmmakers’ professional identity and storytelling practices. By revealing the importance of story for documentary filmmakers, this chapter traces the relationships between observation, staging practices, uncooperative animals, and how these films are constructed through filmmakers’ choices.

Recent Episodes of Staging in Wildlife Films

There are many examples from the history of wildlife filmmaking where footage purporting to be of wild animals in their natural environments was achieved by alternate means, through the use of tame animals or animals in captivity, hidden enclosures, or techniques allowing filmmakers to generate specific behaviours. Collectively, these practices is referred to as staging or “natural history artifice,” the latter referring to the wildlife film’s emergence from the tradition of natural history collection and display. Mitman (2009) has documented trends in twentieth-century wildlife filmmaking and the cultural role of wildlife films amid the tension between

⁹¹ Daston and Lunbeck position this persona as persisting despite the technological innovations affecting possible scientific observations: “It is characteristic of modern scientific observation to invent new ways of probing, recording, and fixing its objects of inquiry, but these technologies never supplant the observer, whose senses, judgement, and acuity are always essential to the integrity of the observation” (2011, 6). Elsewhere, Daston has specified that observation’s ability to “discer[n] and stabiliz[e] scientific objects for a community of researchers” makes the visualization of observations distinct from “mere displays of data” [which would] overlook their role in discovering and crystallizing new objects of scientific inquiry” (2008, 98, 108). For a breakdown of how wildlife film footage represents animals and animal behaviour as observation, see Chapter 4.

providing authentic footage and the challenges of obtaining desired animal behaviours onscreen. Filmmakers speaking publicly about these practices tended to justify their staging practices by appealing to the underlying reality, educational value, or scientific truth of their footage. Their justifications generally rely on arguments that appropriate “natural history artifice” was employed to generate an experience for viewers that is “more real” than could be found by viewers in real life, or to produce footage that, for reasons of cost, pragmatism, or efficiency, could not have been obtained otherwise. These justifications can be thought of as admissions that staging was employed, but for the “right” reasons: the desired ends (of audiences being able to witness phenomena they never could on their own) are considered to justify the means (the variety of staging practices employed to generate those phenomena). In general, such admissions only come to light following public accusations of staging (Palmer 2010).

A prominent example of allegations of wildlife film staging and subsequent justification by the filmmaker is Marty Stouffer’s long-running PBS series *Wild America*. The series was the subject of a multi-part investigation by journalists Mike McPhee and Jim Carrier for the *Denver Post* alleging widespread wildlife staging, misleading film practices, and instances of animal abuse (Palmer 2010, 119-23; Mitman 2009; 203-04). Contemporary editorials denounced Stouffer for his fakery, while Stouffer commented in the *Denver Post* article that

The techniques used by me and other wildlife cinematographers are, to me, at times, almost in the Santa Claus/Tooth Fairy/David Copperfield category. They are benign illusions meant to entertain while they educate, not any sort of malicious deception or intentional dishonesty. I make magic as I provide humans with enhanced love for and appreciation of our precious natural world. The ‘pictorial essays’ which I create are always true and yet they are not always real. (Carrier and McPhee 1996; qtd in Palmer 2010, 119-20)⁹²

The media’s condemnation of Stouffer is illustrative of an expectation of realism in wildlife films; the perceived educational virtues of such programming and its self-promoted authenticity persist in generating expectations that can conflict with the practices of even the most reputable filmmakers. Stouffer’s comment, that his films are “always true and yet they are not always real” sets up a distinction between true nature and the artifice required for its display, a theme with historical resonance for the field of natural history and its display practices.

⁹² Mitman cites a 1996 editorial in *The Denver Post* (16 February 1996) claiming that films purporting to show real life but which use staging and other kinds of artifice “do a disservice to the animals and negate the very point of making wildlife documentaries, which is to help humans appreciate the natural world around them” (Mitman 2009, 204).

In light of such criticisms of staging, wildlife filmmakers' justifications that it would be prohibitively expensive or inefficient to capture footage of certain animal behaviours in the wild are common. A few recent examples of such public justifications involve eminent BBC natural historian Sir David Attenborough.⁹³ Attenborough's BBC program *Polar Bear: The Arctic Warrior* (1997) contained footage of newborn polar bear cubs, narrated as having been sheltered by their mother from "the appalling conditions of winter outside, where temperatures drop to below minus 50 degrees"; they were instead filmed at the Frankfurt Zoo (*Cruel Camera* [25:31]). The incident was justified by Attenborough in the following way: "the key to polar bear biology, of what rules a polar bear's life, is that during the winter the female goes into a den and it's there that her cub is born" (*Cruel Camera* [24:57]). In other words, since Arctic polar bear mothers give birth in dens, sheltering their cubs from the cold, the film is scientifically accurate, even though no cubs were filmed in the Arctic. The BBC employed similar staging techniques for the 2011 series *Frozen Planet*, where a specially-designed enclosure was built in a zoo to allow the filming of a polar bear cub being born. When the zoo enclosure came to light, Attenborough justified the BBC Natural History Unit's decision as being for "the safety of the animal" and claimed "It's not falsehood and we don't keep it secret either" (Watson 2011).

Life in Cold Blood, Attenborough's 2008 series on reptiles, also proved controversial once it became clear that a desert confrontation between Attenborough and a cobra had been staged; the cobra had been brought to the film site from a zoo. Responding to the controversy, the Natural History Unit of the BBC "admitted that the producers of the five-part series [...] made extensive use of 'natural history artifice' during its filming" (Foggo 2008). Aiming to enhance transparency, the *Life in Cold Blood* website now outlines the series' standards for "appropriate" staging:

Wherever possible, animals were filmed in situ in the wild. However, to enable the production team to safely provide otherwise unobtainable new insights into these animals' lives and most importantly to safeguard the animal's welfare, other appropriate techniques were also used. These included working with captive or habituated animals in controlled conditions but always on the advice of scientists familiar with the subjects. The carefully judged use of these techniques has enabled the team to capture revelatory and often previously unseen behaviour that couldn't be revealed in any other way. All the filming techniques used were sensitively employed and followed the published BBC editorial guidelines for natural history filmmaking. (BBC 2008)

⁹³ Attenborough's long career with the BBC's Natural History Unit has resulted in his status as the trusted voice of their natural history programming. See especially Gouyon (2011a) on the fashioning of Attenborough as the BBC's preeminent "telenaturalist."

Attenborough explained to the press how “[it] would be a great misuse of licence payers’ money wandering around just hoping I was going to come across a spitting cobra,” specifying that such staging was only acceptable if no other methods could achieve the same footage (Foggo 2008).⁹⁴ However, these statements ought to be considered in light of Attenborough’s prior admonishment of wildlife filmmakers who employ fairly similar staging techniques: within *Cruel Camera*, Attenborough claimed unequivocally that “I’ve never in my life made a documentary in which we’ve gone to a tame animal or animal trainer and said, ‘please will you train an animal to do this’... never” ([19:58]).

The BBC’s descriptions of careful judgement, sensitive employment, appropriate techniques, and “scientists familiar with the subjects” are reminiscent of Daston and Galison’s (2007) description of the epistemic virtue of truth-to-nature. Under such a view, wildlife filmmakers’ relevant and lengthy experience has granted them the ability to judge whether interventions for the sake of generating particular behaviour are warranted. Given the benefit of the doubt, such interventions can be interpreted as falling under this epistemic virtue; the specimen being filmed needed coaxing to demonstrate what is essential for its species. As a result, the footage of generated species-relevant behaviour is analogous to natural history illustrations which were “always and perfectly available for virtual exploration” despite not necessarily being ever observed in one real specimen (Bleichmar 2011, 386).⁹⁵ Filmmakers’ justifications about showing “real” behaviours, interpreted in this fashion, are in line with the motivations of Daston and Galison’s eighteenth-century natural historians, whose images are the result of “multiple observations, decisions, negotiations, and types of expertise” (Bleichmar 2011, 383). In such cases, under a charitable interpretation, these filmmakers must intervene for the sake of truth-to-nature,

⁹⁴ This statement is potentially undermined by the blue-chip renaissance’s sustained promotional emphasis of the authenticity of wildlife footage filmed unobtrusively by filmmakers on location, a theme I explored in Chapter 2. For how behind-the-scenes material’s observational realism supports the authenticity of the blue-chip renaissance, see Chapter 5.

⁹⁵ Bleichmar specifies that these interventions are the result of a particular hierarchical relationship between naturalists and artists within the historical context of natural history expeditions. Despite the centrality of artist’ images, artists “were ultimately subservient to the authority of naturalists. The draftsmen acted as the expedition’s hand, hired to produce the images that naturalists desired; the naturalist served as its eye, selecting the object to be depicted, indicating which traits to focus on and which to disregard, and imposing the particular vision with which to approach and represent nature” (Bleichmar 2011, 384). This is an elaboration of Daston and Galison’s (2007) description of the “four-eyed sight” involved in these partnerships. For Bleichmar, thanks to naturalists’ authority over their drafting artists, illustrations depict essential characteristics that do not occur within any particular specimen: “The natural history illustration, with its flower always in bloom, its fruit permanently ripe, its animal suspended in clarity and permanence, was at once the instrument, the technique, and the result of natural history as a field of study” (2011, 386).

producing filmable behaviour characteristic of that species. These filmmakers are sages with a camera, both employing their lengthy, field-based judgements in determining which interventions are warranted, and using their visual skills to produce appropriate, species-characteristic images.⁹⁶ As a result, wildlife filmmakers variably inhabit this professional self-identity as reputable observers of nature, as intervenors according to truth-to-nature norms, as artists portraying wildlife based on scientists' findings or broadcasters' requirements, and in personas that combine these features. A key recent example is Attenborough's recent positioning of wildlife filmmaking within the long trajectory of both the human impulse to observe animal life and to produce and collect natural history images (2015).⁹⁷

What Counts as Staging?

Whether particular interventions count as staging, or whether staging constitutes acceptable filmmaking practice, were key issues within my interviews with documentary filmmakers. The filmmakers I spoke with conceptualized staging as a shortcut to obtaining particular animal behaviour on film; in such cases, staging is situated as a shortcut to what would eventually occur or to what really does occur beyond the reach of their cameras. Despite such widespread agreement, there was no consensus on which specific techniques and practices constitute staging, or whether criticism of other filmmakers accused of staging is permissible. For documentary filmmaker Mike Downie, the most commonly-employed unacceptable staging technique is baiting, or attracting animals with food.⁹⁸ He contrasts baiting to practices that locate animals using knowledge of their behaviour:

Mike Downie: Filmmaking is not a science, and you need good luck, and you need things to really go your way. Obviously, you need to go into a situation, you can't bait, although

⁹⁶ When staging practices are justified as being for the sake of cost or efficiency, as in Attenborough's 2008 cobra controversy, it becomes easier to be skeptical about the imputation of truth-to-nature motives. Public justifications of staging practices generally take place in the face of accusations of fakery, and not unprompted (Palmer 2010), apart from the stance of "claimed artificiality" for certain wildlife films and MODs (Gouyon 2016). This suggests at least a "transparency gap" between filmmakers and the atlas makers of interest to Daston and Galison.

⁹⁷ *Amazing Rare Things: The Art of Natural History in the Age of Discovery* (Attenborough 2015) is a lavishly-illustrated volume of essays about the observation of animal and plant life and the production and circulation of natural history images. Attenborough's prominent author credit on the collection of essays, as well as his contribution arguing for the continuity of image-making from cave paintings to recent advances in photography and wildlife filmmaking, situates his professional self-identity within the continuity of natural history observation and illustration, collapsing the distinction between naturalist and artist described in Daston and Galison (2007).

⁹⁸ Mike Downie is a documentary filmmaker and television producer with a background in business economics. He has produced several animal and science documentaries including *The National Parks Project* (2011), *Invasion of the Brain Snatchers* for *The Nature of Things* (2013), and *One Ocean* (2010).

I will admit that [for a film about squirrels] we threw a few acorns around in the area that we were filming, but they were in the area.

[...]

[26:22] **EL:** What's your impression of staging practices in wildlife films?

MD: It's wrong. It's not supposed to be that way.

EL: And what kind of practices would you include under the label of staging?

MD: See, *I think it's probably, in most cases it would be, I think probably putting out food, you know, baiting?* Having said that, I saw this great thing last night, with a Nat Geo photographer and of course what they call camera baiting, they're setting up remote cameras and then they're triggering the camera, the animals are captured, what they don't do is they don't put anything, they try to figure out the animal behaviour, and that's what people want. They don't put stuff to attract the animal, and they get the photograph of the snow leopard, they have to figure out where the snow leopard is frequenting.

In describing a film on squirrels, Mike jokingly admitted that they “threw a few acorns around” to attract squirrels, but downplayed the action's significance with an explanation that the acorns were already in the area. For Mike, baiting involves using food to attract animals to a filming site rather than the filmmakers having to locate the animals in the wild. Mike contrasted the unacceptable staging practice of baiting with “camera baiting” which involves remote cameras to locate animals in the wild. Photographers using “camera baiting” must employ tracking skills and experience with animals to obtain good photographs: he specified that “they try to figure out the animal behaviour [...] they have to figure out where the snow leopard is frequenting.” The intervention of baiting with food would give the photographer a shortcut to the animal that Mike thinks ought to have been located by other means.

Independent documentary filmmaker Andrew Gregg, whose work mainly focuses on indigenous peoples, described some of his film practices as acceptable due to his audience's presumed awareness of the staging:

EL: What's your impression of these practices in wildlife film?

Andrew Gregg: Well, everything is context, right? I mean, I've used animals with a handler before and I didn't disclose that they were handlers but the situation was that I was recreating a native myth. So there was, it was almost a dream-like sequence, and so I had a giant bull bison at night, backlit with sort of an aura around him.⁹⁹ *I don't think anybody would figure out that I had gone out into a herd of actual bison and backlit one that stood there long enough, you know? Similarly, I needed a wolf and I needed to zoom in on his eyes as he stood there, so, I didn't disclose that these were tame animals but I think*

⁹⁹ Although “a dream-like sequence” may not seem to fall within the category of documentary, such reenactments within wildlife and anthropological filmmaking are common documentary practices and have engendered discussion over issues of permissibility and disclosure. I discuss reenactment and its connection to wildlife film staging in Chapter 4. See also Rony (1996), Rothman (1998), Winston (1999; 2000), Nichols (1991; 2008), Godmilow and Shapiro (1997), Kahana (2009), and Jasen (2011).

everybody would figure it out. I don't think they actually went- but if you're saying, "this is an animal in the wild," I remember, ages ago, I think it was in the '80s, this would be great if you could find this, there was a Fifth Estate exposé on shows like Mutual of Omaha-
EL: Cruel Camera.

AG: Yeah yeah yeah. And then they realized how much Marlin Perkins was faking, and how much Disney was faking. You know those lemmings never jumped off the cliff, they were pushed.

EL: Right.

AG: And *I think it's been there as long as filmmaking's been there, and the reason it happens is two things. One, frustration, because people aren't giving themselves enough time to get the animals in the natural environment, and two is budgets. They're burning all this money, waiting for the animals to do their tricks.*¹⁰⁰



Figure 3: Andrew Gregg's business card

For Andrew, not revealing staging practices would be “dishonest” if the audience was misled into thinking that faked footage was of wild animals in their own environments. Filming tame animals, or animals in a zoo, or the staging of what is now known as the “lemming suicide myth” (Woodford 2003) would count as being “dishonest” because the audience is unaware of what really took place. There is a difference for Andrew between that kind of “dishonesty” and his uses of animal

¹⁰⁰ Andrew Gregg is an independent documentary filmmaker with a background in journalism and current affairs programming. His films, including *The Last Nomads* (2008) and *The Norse: An Arctic Mystery* (2012), focus on indigenous peoples and often require travel to remote locations. See *Figure 3* for an image of his business card, which depicts an explorer with a pith helmet and camera.

handlers, because he expects that audiences would not believe that the animals were wild based on his cinematographic choices of backlighting and a zoom-in close-up of a wolf's eye. For Andrew, it would be dishonest to claim that your footage was of genuine wild animals shot on location ("if you're saying, 'this is an animal in the wild,')") and he used examples from the history of wildlife filmmaking, *Mutual of Omaha's Wild Kingdom* and Disney's *True-Life Adventures*, which each employed widespread fakery while claiming to show unstaged animal behaviour in the wild. Andrew's assessment that this kind of staging takes place because of "frustration" and "budgets" reinforces a conception of staging as a shortcut, where the filmmakers cannot devote the time and money required to achieve the same shot without staging.

Documentary filmmaker Geoff Bowie had an alternate notion of staging in that his understanding of the rigours of blue-chip nature filmmaking involved building sets to allow access to "spectacular" shots:

[17:35] **EL:** Are you familiar with the term "blue-chip nature film"?

Geoff Bowie: I'm not familiar with it, but I guess I can imagine what it means.

EL: OK, based on that, how would you characterize a blue-chip nature film?

GB: I'd say it's one of the ones, one of the the big ones, like *Canada Wild* and the *Animal Planet* and it's the ones where you have these, in super-HD, these incredible shots I mean it's either a school of fish that turns all of a su- [hand motions] you know it turns and dances around and it glistens and silver and it's just jaw-dropping beautiful, and in all the shots whether you're with alligators in the swamp or you're with [laughs] a hippopotamus or you're with fish or birds it's all in close-up and spectacular.

EL: Have you ever worked on a blue-chip-

GB: No.

EL: -wildlife film? Do you think the experience would be different from other projects that you've worked on, just speculating since you haven't worked on one?

GB: Yes, I think it would be different. I think, I imagine it's a small crew, cameraman, maybe a sound man, and *depending if they have to build something, like if they have to build, the lair of an animal and set it up so when the animal's in there, they're there and can film it, then that would require more people*, but I imagine it's usually small crews in remote places for a long period of time. And, I could imagine that the conditions of just living would be pretty uncomfortable, and you'd have all the stuff that you don't have, and that you don't see in the film like the bugs and [laughs] the misery, that's all cut out [laughs].¹⁰¹

Although Geoff had never worked on a blue-chip film and had not heard the term before, he was able to vividly describe a blue-chip film visually and reproduce the experience of a viewer

¹⁰¹ Geoff Bowie is a documentary filmmaker. He has made four documentaries for *The Nature of Things*, including *The Hospital at the End of the Earth* (2001) and *When is Enough, Enough?* (2004). Many of his films focus on social and environmental issues.

watching “jaw-dropping beautiful” and “spectacular” footage.¹⁰² His understanding of the rigours of blue-chip filmmaking includes the possibility of building a set or enclosure to obtain those visuals. For Geoff, constructing a lair in order to film animals within it would belong to legitimate filmmaking practice and not to unacceptable staging; Gouyon has described how the BBC Natural History Unit’s use of the technique in the 1960s and 70s for the novel production and visualization of natural knowledge constituted a stance of “claimed artificiality” legitimating natural history filmmakers’ expertise (2016).¹⁰³ While some filmmakers agree with Geoff’s assessment, others describe the practice as staging while others refer to a “grey area.” This disagreement illustrates not only the uneven definition of staging but of the tensions between intervention and observation impacting filmmakers’ practices.

Another filmmaker with a distinct understanding of staging is documentary filmmaker Gary Marcuse, who understands that much contemporary wildlife filmmaking takes place in zoos and other settings where animals are in captivity.¹⁰⁴ His own work filming jaguars in captivity informs this attitude, and he is rather self-reflective of the ethics of his representational practices. I have included several vignettes where Gary returned to the topic of filming in captivity to demonstrate his reflexivity; he does not simply explain the necessity for his own filming in zoos but explores the practice’s issues of transparency, responsibility to audiences, and individual filmmakers’ ethical responsibility given this widespread contemporary staging practice.

[15:51] **EL:** And how would you compare filming human and animal subjects?

Gary Marcuse: [laughs] I was tempted at one point to make a film about wildlife films, and I would have called it “Acting like Animals.” Because the conventions used in documentary films for animals are rarely purely observational, *a lot of these megafauna are not, couldn’t be filmed except in captivity*, so you see an awful lot of footage of course that is, in the jaguar film you see a jaguar stalking around but he’s in a compound and he’s being fed chicken, by the handlers, who are making him go over and sniff things. And they, the biologist that I’m talking to who’s studying jaguars, saw them once, when he captured them to collar them, and then maybe for 2 years he would be studying them but only by

¹⁰² This may be slightly unusual, as that the term is fairly well-used in professional circles, but Geoff has never worked on a blue-chip documentary. However, he was immediately able to reproduce a definition for the term that replicates that described by Bousé (2000), Mitman (2009), Palmer (2010), and others.

¹⁰³ See Chapter 5 for a detailed description of Gouyon’s historical treatment of claimed artificiality, as well as how wildlife filmmaking has relegated these human narratives of the challenges of wildlife filmmaking to behind-the-scenes material and making-of documentaries (MODs).

¹⁰⁴ Gary Marcuse’s background is in journalism, radio, and television documentaries for the CBC. His recent films, including *Nuclear Dynamite* (2000) and *Waking the Green Tiger: The Rise of a Green Movement in China* (2011), focus on environmental issues.

knowing where they were with radio, because he'd never see them because they're just invisible; they're black, they move around at night [laughs] and the jungle is very dark.¹⁰⁵
[...]

GM: But really what I'm doing there was capturing stories of the wildlife biologists and their championing of the species, and so *a lot of the animal behaviour was stock shots, of animals, either in captivity or in the wild, and I've mixed feelings about the technique but generally speaking I'm very positive about it,*
[...]

GM: You're talking about challenges of doing it, *I mean clearly the challenges are finding it and in Belize we're filming in a zoo and that was the only way you could see the animal. Should animal wildlife programs more transparent about the location of all the animals, do we implicitly understand how well the people know the conventions of wildlife [programs]? It's a whole other genre, and I think it has its own ethical dimensions and series of decisions that are made.* Most of these do, I mean, filming say, tribes in Borneo is going to have its own set of conventions as well, how much do you interfere, how much does your presence affecting things, how true is it, how transparent should you be? Do you expect your listeners to know, and so on, these are, there's a whole raft of questions I think for every subgenre.

[...]

[56:38] **EL:** What do you think about criticism by viewers or by the media about staging practices?

GM: Well I think it's all, everything should be open for discussion, I don't see that, I think it's a criticism of the genre and not the individual filmmaker, because *usually the filmmaker is working within the conventions they've established in that series with them,* but as far as what you think about what you're looking at, I think it's exactly the same useful debate that goes on around zoos. And I think that's the easiest parallel, I think that's an area where people are familiar with the puzzles.

By referencing the difficulties of locating jaguars, for both scientists and filmmakers (“they’re just invisible; they’re black, they move around at night [laughs] and the jungle is very dark”) Gary positions those animals as filmable only in captivity. In so doing, Gary employs similar justifications to those used by Attenborough and the BBC (Foggo 2008; BBC 2008). Gary situates his undisclosed filming of animals in zoos within the established conventions of wildlife filmmaking (see especially Gouyon 2016), and in so doing rejects a simple distinction between staged and unstaged footage.

Beyond the question of filming animals in captivity, Gary does consider there to be categories of staging that are unacceptable:

¹⁰⁵ I describe Reinert's (2013) account of how radio telemetry affords a “constitutive withdrawal” for Lesser Geese in Chapter 5.

EL: Do you think there are any behaviours that would always have to be excluded in principle?¹⁰⁶

GM: Well I think that if filmmakers are using techniques of using captive animals as bait, or something, I don't think that would be acceptable anymore, so that would have to be excluded, but I don't think many of them are doing that, I think they have to sign, basically a kind of a code of conduct for most of the, for Discovery or, I'm not positive about that, but I think there's an implicit set of standards that exist for each broadcaster where you kind of understand what would be excluded.

He refers to broadcasters' standards of what types of staging would be permitted and which would be excluded, in response to my question of whether any wildlife behaviours would always be excluded from a film in principle. He does not believe that contemporary filmmakers bait with captive animals, a practice which historically had been considered acceptable.¹⁰⁷

Multiple interviewees similarly referred to broadcaster standards and editorial discussions; for them, the particular broadcaster is a gatekeeper for the types of filmmaker practices that are permitted in the collection of footage of animals. Documentary filmmaker Kenton Vaughan described rejecting a piece of stock footage from the BBC in his film on the reintroduction of the black-footed ferret in the Canadian prairie.¹⁰⁸ This decision was in part because he did not believe it would pass muster with *The Nature of Things*' standards:

Kenton Vaughan: There was a piece of stock footage from the BBC, that the BBC had created, they had created a whole environment for a ferret, where the ferret goes in and kills the prairie dog; we didn't use it A-1 because it was pretty cheesy looking, and 2, it was very expensive and 3, we probably wouldn't've included it because, actually the ferret was, I mean it was all set up and a prairie dog was killed, so I'm not sure that would've met the requirements of *The Nature of Things* anyways.¹⁰⁹

¹⁰⁶ At this point the Skype conversation encountered significant static and Gary asked me to repeat the question, which I did.

¹⁰⁷ In public talks, BBC Natural History Unit producer Jeffery Boswall often performed an exercise where he polled his audiences on the acceptability of using various species as live bait. Boswall reported that audiences expressed increasing disapproval when asked about using insects, fish, birds, and mammals; he argued that this corresponded to the increased fellow-feeling for species more similar to ourselves (Palmer 2010, 118).

¹⁰⁸ Kenton Vaughan's background is in journalism; he has worked for the CBC as a researcher and producer. His documentaries cover a variety of topics, including science documentaries for *The Nature of Things*. He does not consider himself to be an exclusively wildlife documentarian although he has made films about wildlife including *The Ghosts of Lomako* (2003) and *Return of the Prairie Bandit* (2011), both for *The Nature of Things*.

¹⁰⁹ The current *The Nature of Things* guidelines for independent producers include a section titled "Guidelines for Filming Animals" which begins "There are two fundamental issues to consider when filming wildlife for a Nature of Things documentary: the welfare of the animal & editorial accuracy." Under animal welfare, the guidelines prohibit disrupting "the ecological integrity of the ecosystem," employing practices that "permanently alter the natural behaviour of your subject" such as feeding wild animals, or using drugs or restraints "in order to alter their behaviour for the sole purpose of filming." All of these practices would violate *The Nature of Things*' statement of values that "The welfare of an animal is more important than the sequence." The guidelines also specify that "Most of the time you will be filming an animal in the field under the guidance/supervision of a scientist who has a research permit."

[8:56] **EL:** Do you think in general there are any behaviours that would always have to be excluded from this type of documentary?

KV: No. Always have to be excluded- no, *any situation you would film, you would have an editorial discussion about whether you would film it.* I don't think that's any different from filming humans. I mean if you film something atrocious that humans are doing, you would still have the editorial discussion about what to include, what not to include.

Broadcasters' standards determine whether certain categories of footage or filmmaking practices are permissible, and individual staging techniques, such as the use of animals as captive bait, are considered inappropriate for certain projects if they would violate those standards. For example, *The Nature of Things*' "Guidelines for Filming Animals," an instance of the broadcaster standards discussed by Gary and Kenton, specify that "It is unacceptable to restrict or restrain an animal by any means to attract a predator." Other film practices, including "reconstructions or simulations or use of captive animals to represent their wild counterparts," require a discussion with *The Nature of Things*' Executive in Charge of Production prior to filming, in line with Kenton's reasoning about "the editorial discussion."¹¹⁰

Caroline Underwood has over two decades' experience as a wildlife filmmaker and currently works at *The Nature of Things* as a Senior Producer.¹¹¹ Her position with Canada's primary broadcast venue for science documentaries as well as her experience as a filmmaker means that she is uniquely positioned to describe the experience of Canadian documentary filmmakers on both sides of the pitching meeting. Caroline takes a strong stance against staging, but considers there to be more serious breaches of wildlife representation:

EL: What's your impression in general of staging practices in wildlife films?

CU: I think it's common, because it's deemed to be an economic necessity; I have not done it, I'm not interested in doing it and if a documentary required it in order to for it to be commissioned, I wouldn't commission it or do it. [Pause] *I don't think any story is worth telling where you have to keep a wild animal in captivity.*

EL: OK. And, what do you think about viewer criticism of these practices?

CU: Well it's very interesting, the whole question of truth-telling, esp- particularly in the wildlife genre. The BBC took a really bad hit a number of years ago because they had a film, they had included some shots of a polar bear in her den with cubs that had actually been shot in a zoo in Germany; all the rest of the film had been shot in the wild, and while

Under "Editorial Accuracy" the guidelines remind producers that *The Nature of Things* follows the "same value of truth and accuracy" as all other CBC documentaries (CBC 2018).

¹¹⁰ Also, it seems that if broadcaster standards were the only relevant factor, Kenton's appraisal of the BBC's stock footage as "cheesy looking" would not have been relevant, as the third of his three reasons on its own would have been sufficient.

¹¹¹ Caroline Underwood has worked as a writer, director, and producer of wildlife films that mainly focus on Canadian wildlife. Her films include *Lords of the Arctic* (2003) and *Whale Mission* (2009).

they had carefully worded it, the viewer would never go away thinking “oh, that was shot in a zoo in Germany, that was a captive situation” and it kind of blew up in their face, and I’m not quite sure what was driving that, because [pause] from my perspective, would it have been better to potentially disturb the hibernating bear and her cubs by sending a camera down into the den site, at risk to the bears, potentially to the people who were trying to get the camera in the den site? And this very intimate shot, *to get this very intimate shot of a bear and her cubs before they’re ready to leave the den, or to include what was a very real shot, it was not a fake shot although it was a captive bear*, which has its own issues, but I, they’re kind of a separate one,

EL: Mm-hmm.

CU: Zoo bears, and using that, the fact that those bears were available, were in captivity, to show that very warm and intimate moment of these tiny little bears clambering over the mother... So, truth and honesty, there’s so much that’s not honest about wildlife filmmaking, to me that wasn’t particularly high on my list of things that we need to be concerned about. *When I see fat lynx-*

EL: [laughs]

CU: *-or fat wolves or fat bears because they’re well-fed animals living on a game farm, kind of purposelessly across a supposedly wild landscape, I wonder about what that does to viewers’ understanding and perceptions of the natural world.*

Caroline’s stance that she would not commission a film that involved filming zoo animals. This is in direct contrast to Gary Marcuse’s attitude that he needed to film jaguars in captivity in order to tell stories about wildlife biologists. She also unpacks notions of “truth” and “honesty” in the episode of the BBC filming polar bears in a zoo, where viewers were highly critical of that staging decision once it had been revealed in the media.¹¹² She offers her perspective as a broadcaster on the scene, revealing how she would have weighed the potential risks to wild animals and to the camera crew versus the availability of captive bears to showcase the amazing scene of “that very warm and intimate moment of these tiny little bears clambering over the mother.”¹¹³ She makes a similar justification that Attenborough did when she specifies that it was “a very real shot, it was not a fake shot although it was a captive bear, which has its own issues.”

It is interesting that after having taken a strong stance against filming captive animals, Caroline was able to rationalize how a broadcaster might weigh her alternatives and decide that filming a scene in a zoo enclosure would be appropriate. Whether the behaviour of polar bears within their den in the wild is similar to that of captive polar bears in a zoo is for Caroline a separate

¹¹² See especially Cauchi (2008).

¹¹³ Indeed, questions arising from balancing filmmakers’ desire to show audiences amazing scenes of animal behaviour with the use of staging practices is a theme that most of my interviewees brought up, particularly when describing high-profile examples of staging like the BBC NHU showing the birth of a polar bear cub within a zoo enclosure. Most filmmakers were familiar with this example, and weighed the benefits and risks to the multiple stakeholders affected by the situation, including filmmakers, broadcasters, audiences, and animals in the wild.

question from whether animal behaviour was faked or generated artificially, and she sees the criticism levelled at the BBC to have been overblown. A greater problem for Caroline is the use of game-farm animals, who risk giving viewers the wrong ideas about wildlife; in particular, she believes that “viewers’ understanding and perceptions of the natural world” are detrimentally affected when they become used to seeing “fat lynx [...] or fat wolves or fat bears” and thinking that they are genuine wild animals.¹¹⁴ The use of game farm animals featured prominently in *Cruel Camera*’s (2008) exposé of fakery and animal mistreatment within the film industry; Bob McKeown showed how a realistic and wild-seeming scene could be filmed using game-farm animals who could perform stunts on cue.

Natural history filmmaker Jeff Turner considers staging practices to be “shortcuts” to footage that a filmmaker ought to devote the time to achieve in the wild.¹¹⁵ He also focused on the BBC’s polar bear scene when describing the spectrum of staging practices that take place in the industry. For Jeff, as was the case for Gary, bringing animals together to show one killing the other one is not appropriate, and he does not think any filmmaker he knows would contemplate it. But filming the live birth of a polar bear in a zoo enclosure would fall in a “grey area” on the spectrum, similar to Caroline’s assessment of the complexity of the situation:

[25:44] **EL:** In general, do you think that viewers trust what they see in documentary films?

Jeff Turner: I think they do, I think in general they do, I mean *I think there’s more good true honest pure naturalist filmmakers than there are ones who take shortcuts* so, I generally think yeah they do.

EL: And relatedly, can you say more about your impression of staging practices in wildlife films?

JT: It’s getting rarer and rarer. When we first started out in the business in the 80s, it was much more common, there were a lot more shortcuts taken, a lot more things done by certain filmmakers, that wouldn’t be given any thought at all today. I mean no one would even contemplate doing some of the things that were done 30 years ago. There’s a lot more concern and right through the entire process, editorially and everything a lot more oversight that broadcasters have in wanting to make sure that certain, there’s a much stricter code of practice now, it’s sort of like an analogy would be years ago no one thought anything about drinking and driving, it wasn’t something that necessarily was a big deal, people tended to do it a lot more. Now they you wouldn’t even consider doing that because it’s socially so unacceptable to go down that road and it’s kind of like that in natural history filmmaking,

¹¹⁴ For a more extensive discussion on the impact of animal representations in wildlife documentary filmmaking, see Richards (2014); Mooallem (2013); and Palmer (2010) among others. On the challenges of measuring this impact, see the conclusion of this dissertation.

¹¹⁵ Jeff Turner has had a long career as a camera operator, cinematographer, and producer filming wildlife, including episodes of *Planet Earth* (2006), *Frozen Planet* (2011), and *Wild Canada* (2014).

except *it's so frowned upon by the industry that nobody, no serious filmmaker in this industry would ever consider doing those sorts of things.*

[27:47] **EL:** What do you think about viewer or media criticism of staging practices in wildlife films?

JT: Well I think that they're valid, I mean, a lot of times, *it's fair enough to level criticisms because I think the media and the public has a, and then again it comes to this idea that when they say to you what you're seeing is this natural behaviour that happened, you go was it in any way contrived or controlled or set up by the filmmakers, then that's a falsity, that's no longer a real fact, it's manufactured and the audience then, are being deceived.* So, no, there's obviously a, I mean I think, but, there are graduations of that. There's a clear line, what I mean is there's certainly a lot of vagueness in how certain people interpret that. For example, I mean something that would never be done today but would have been done by certain filmmakers 30 years ago, would have been, predation sequences where you introduce 2 animals to each other and in a controlled environment where one is going to kill the other one. You know, those sorts of things are just not done today, there isn't any filmmaker I know that would ever do something like that. OK, so that's the sort of end of the, one end of the spectrum today. Then you have the grey area I talk about would be something like the BBC when they made their polar bear film they wanted to show the birth of a polar bear, well, they had to film that in a zoo. So you saw the birth of the bear, and you know it's a little polar bear cub being born but it wasn't in a wild den, it was in captivity and that behaviour and that event is not manufactured or altered in any way, it would, obviously the animal was born as it would be in the wild, I mean it emerges and that fact that process is completely natural but the location of it isn't in a wild den somewhere, so is that- there's, and *there was a strong public reaction to that, there was a feeling that the filmmakers had broken the trust by insinuating that that was filmed inside a wild den, though there's that kind of the grey area because the filmmakers involved would have said "there isn't any way we could have filmed that in the wild because we would have disturbed the animal to a point where it might have threatened the life of the newborn cub." I mean they felt very much like they couldn't do that in the wild, and so in order to show it the only option they had was to do it in captivity. So that's sort of a grey area that I'm talking about.*

Jeff's lengthy response provides a great deal of insight into his attitude about staging. Jeff does not believe that filmmakers can justify misleading audiences; if animals are filmed in controlled or captive settings, filmmakers should not claim that the opposite is the case. And while he feels that the controlled predation of animals is not acceptable, positioning it at the extreme end of a spectrum of filmmaker behaviour, he allows for differences of opinion about other types of staging when he describes a "grey area." Next, Jeff interprets the negative response public to the BBC filming in a constructed enclosure within a zoo as "a feeling that the filmmakers had broken the trust by insinuating that that was filmed inside a wild den": presumably, audiences would not have reacted so strongly if they were not expecting the scene to have been shot in the wild. Like Caroline, he distinguishes between the construction of the den and the authenticity of the animal

behaviour filmed within while imagining the rationalizations that the BBC's filmmakers would have gone through to justify their inclusion of captive footage. Jeff, a cinematographer and camera operator, expressed in strong terms the need for transparency and the value of obtaining authentic footage of animals in the wild; the latter is a major component of his production experiences on blue-chip wildlife projects including *Planet Earth* (2006) and *Frozen Planet* (2011).

The tensions and complex attitudes these filmmakers expressed about the practices of food baiting, animal handlers, or filming in captivity compared to filming wild animals on location or “camera baiting” call upon the distinction between intervention and observation in the history of science, a theme Gouyon explored in his account of wildlife photography and early natural history filmmaking. For Gouyon, the construction of the telenaturalist persona in early natural history television involved a continuity with the Victorian values of amateur natural history (patience, skill, courage, bodily denial, and self-restraint).¹¹⁶ The telenaturalist's credibility resulted in part from their position as an objective observer. It required “the active repression of the individual's intervention” (Gouyon 2011, 31) as well as rhetorics of embodied self-discipline, drawing from the enduring legacy of “observation as an individual, solitary act of concentration, a regime of attentiveness that requires withdrawal from worldly distractions” (Bleichmar 2011, 375). As evidenced by my interviewees' divergent responses about the acceptability of particular staging practices, the distinction between representing nature through practices of mechanical objectivity and of truth-to-nature remain relevant: Gouyon identified that the formation of the telenaturalist identity exhibited the same “tension between personal sacrifice and liberation from the personal, between active intervention in and passive registration of nature” (Daston and Galison 2007, 381; qtd in Gouyon 2011a, 32). My interviewees' responses reveal a less solid distinction between observation and intervention, which I explore further in the conclusion of this chapter with help from recent scholarship that complicates this historical boundary.

As we have seen, wildlife filmmakers disagree about whether or to what extent particular filming practices (baiting, filming animals in captivity, the use of enclosures or game farms)

¹¹⁶ Gouyon (2011a) describes how the first on-screen wildlife filmmakers in natural history films and TV programs in Britain cultivated a particular identity as telenaturalists, whose trusted public expertise acquired authority and credibility. Gouyon's linking of scientific identity and cultural values is an example of Secord's assertion that natural history's observational practices depend on their distinct historical contexts: naturalists' “processes of observation are part of a set of wider cultural habits” (2011, 423) and the cultural contributions to naturalists' activities influenced their scientific output. Secord's case study of the Napoleonic War and “the regime of watchfulness it engendered” (2011, 422) for naturalists showcased the development of natural history's observational context.

constitute staging. With regard to these practices, some filmmakers specified that certain staged shots nevertheless showed “real” behaviour, particularly with regard to the well-known example of the polar bear zoo enclosure. The filmmakers I interviewed also differentiated between animals or animal behaviour as being of “wild” or “captive” origin, with consequences for the presumed authenticity or resulting audience experiences. These themes will be explored in further detail in the next section, where filmmakers describe their attitudes connecting staging practices and reputability, which ties strongly to their sense of audience trust in the authenticity of what they see. More importantly, reputability impacts their professional self-identity as wildlife or environmental filmmakers and as documentarians.

Staging, Reputation and Trust

You can lie in print, you can lie on film, you can lie in radio. The ability to tell untruths is huge, of course. But reputable natural history filmmakers do not lie. They tell the truth. But telling the truth is a simplification, it's often very difficult to tell the truth. But that's what we try to do. (David Attenborough, *Cruel Camera* [20:12])

The above quote by David Attenborough to *Cruel Camera* interviewer Bob McKeown contains complex interactions between natural history filmmaker reputability, telling the “truth” about the natural world, and the inherent difficulty in obtaining desired animal footage. As we saw in the previous section, staging is generally understood as a shortcut to that animal footage, and filmmakers have different assessments of which practices count as staging. Attenborough asserts that “reputable natural history filmmakers do not lie,” but juxtaposes this statement with an equivocation that “telling the truth is a simplification.”¹¹⁷ His reputation as the BBC’s preeminent natural history filmmaker has survived several high-profile incidents of staging; each of these has resulted in justifications from Attenborough or the BBC that particular staging practices are the only way to showcase particular behaviours which fulfil audience education purposes, or that are acceptable for reasons of cost- or time-effectiveness. Indeed, these justifications follow filmmaker Andrew Gregg’s assessment that staging is the result of filmmakers who are not able to devote enough time or money to obtaining the shots they need.

How does staging relate to reputability for working filmmakers, and how comfortable are they with admissions of staging or disclaimers indicating that particular footage was obtained

¹¹⁷ Attenborough’s statement about reputability is echoed by the attitude of Jeff Turner, who said with regard to staging that “nobody, no serious filmmaker in this industry would ever consider doing those sorts of things.”

through particular staging practices? Some critics of staging practices that are not disclosed to audiences have suggested requiring disclaimers for filming in controlled situations, animals filmed in captivity, game farm animals, and other types of staging.¹¹⁸ The filmmakers I interviewed were highly divided on the use of disclaimers for staged footage of wildlife. Some of them were concerned with audiences being misled and felt strongly that if audiences found out that filmmakers did not reveal their staging techniques it could negatively and retroactively affect their viewing experiences and trust. Some did not want to judge others' inclusion of disclaimers or lack thereof, not having been privy to the relevant editorial conversations. Some could see both sides of the issue, while others focused on the logistics of including a disclaimer. My interviewees differed greatly in terms of their comfort in admitting to staging footage, from interpreting their filming of captive animals firmly within established genre conventions, to rationalizing that audiences could not possibly have been misled, to pondering the pragmatic challenges of including disclaimers, to requesting the anonymity of an anecdote about a film's use of staged stock footage. Their results continue to demonstrate variability and diversity, based in part on their different professional experiences and broadcast production roles.

Certain filmmakers felt that audiences trust footage in wildlife documentaries, and are understandably affected when that trust turns out to have been misplaced. Andrew Gregg believed that audience members' experiences would be altered if they discovered that filmmakers had staged some of their footage:

Andrew Gregg: People are gonna, if you're around a table and somebody says "Oh, did you see that amazing doc about the black bear and her cubs" or something, and you say "Did you know that was shot in a zoo?" it's gonna completely, I don't care what the filmmaker says, *it's gonna completely change that audience member's perception of what he or she saw.*

His response is reminiscent of Jeff Turner's earlier concern with audience members' trust in filmmakers being broken when filmmakers claim to be filming in the wild but who really employ staging techniques. Gary Marcuse also described audiences trusting filmmakers, and similarly saw that trust as violable when filmmakers are not clear about their staging practices:

EL: In general, do you think that viewers trust what they see in documentary films?

Gary Marcuse: I do, *I think they usually do. But that trust can be violated, but we tend to think that we're seeing the truth, so we're all a little shocked when it turns out somebody*

¹¹⁸ The most prominent voice in this discussion is Chris Palmer, whose reforms for wildlife and conservation filmmaking would require consistent staging labels for various levels of inauthenticity (Palmer 2010, 191).

doctored footage or invented a story, as sometimes happens, you know. Even in the major media.

For Gary, filmmakers who “doctored footage or invented a story” risk violating viewer trust because he believes viewers do have trust in documentary films. This supports Austin’s (2007) survey results that viewers generally trust wildlife documentaries.

Kenton Vaughan, who earlier referred to the importance of editorial decisions in deciding what footage of animals to include, described the issue of disclaimers as similarly dependent on situational factors:

Kenton Vaughan: I haven’t really thought about the use of disclaim-, I mean, there, in my other films where we’ve used disclaimers it’s because it’s, there’s been violence or coarse language or really mature situations so I’ve never actually kind of thought about it in terms of nature films before. Other, because I’ve never engaged in any activities where,

EL: Right,

KV: where we’ve used tame animals and tried to present them off as something else.

[35:19] **EL:** In, and hypothetically, because you haven’t done this in your work, if that kind of situation was taking place in the footage, do you think it would be appropriate to include a disclaimer?

KV: I wouldn’t wanna say, *I wouldn’t want to make a comment now whether it would be appropriate, because I know just in the course of making documentaries that those kind of decisions are only taken after long, ethical conversations.*

EL: Right.

KV: So, I would be, *it wouldn’t be appropriate for me to say yes or no right now because each situation is different.*

EL: So it would depend on the context.

KV: It would depend on the context, absolutely.

Kenton’s commitment to film projects’ individual editorial contexts was such that he was not comfortable commenting on other filmmakers’ decisions to include disclaimers or not. His own experience of the “long, ethical conversations” in question mean that for him, the strenuous undertaking of that decision making cannot be fully appreciated by someone outside of that context. He has employed disclaimers to warn viewers about sensitive content, but he has not used them for any wildlife films. His response suggests that using tame animals would fall within a broad domain of wildlife film practices where Kenton would consider a disclaimer to be warranted.

The history of trends in documentary filmmaking as a whole was relevant to Geoff Bowie’s response to filmmakers disclosing their staging practices:

[29:13] **EL:** You touched on this in your answer previously, but what’s your attitude towards disclosing those kind of practices? Should viewers be aware?

Geoff Bowie: Yeah, my priority, my preference in documentary is that you’ve got a purpose other than making a product for consumers with your documentary. And if you

do, then part of that could be your priority is not just to make a product that sells and is popular but that has a social function, a cultural function, and *I think being honest and revealing, there's many documentaries that have experimented with how you reveal and how you deal with reality and have that as a reflection, self-reflection, and I admire that greatly, and that's the kind of work that I find important, and that I think ultimately, in the art of documentary, the history of documentary, that's what matters and might have staying power.* I think the commercial television documentaries, well I don't expect them I guess to have that kind of self-reflection, they're about making a shiny product.

Geoff contrasts his environmental filmmaking, which typically has a political dimension and which he has described as having “a cultural function,” with “making a product for consumers” undertaken by “commercial television documentaries.” He considers the honesty required in revealing filming practices to viewers to be similar to the self-reflection and experimentation located throughout the history of documentary as filmmakers grappled with the issue of whether they ought to include themselves in their own films. Filmmakers' differential acceptance of interventions forms the analytic framework of different documentary modes in Nichols' *Introduction to Documentary* (2001). Now canonical in documentary film studies, these modes (poetic, expository, participatory, observational, reflexive, and performative) roughly map onto historical shifts in filmmaking practice, in part due to the availability of new cameras, but are mainly based on filmmakers' changing approaches to their relationships with their subjects and to their own inclusion or intervention within the film. For example, documentaries within the reflexive mode allow reflection and critique of the filmmaking process itself, while participatory documentaries involve the filmmaker interacting with the films' subjects. Blue-chip wildlife films, which draw from expository and observational documentary, do not tend to promote the same self-reflection or interaction with their animal subjects (apart from within their MODs) and would likely count for Geoff as “shiny product[s].”

Jeff Turner explored the argument against using disclaimers, which relates to the potential that the audience might suspect that the entire film was staged. In his judgement, it is better for filmmakers not to include anything that might require a disclaimer in the first place, even if that means viewers will not be able to witness amazing moments:

[31:18] **EL:** In that grey area, do you think that it's ever appropriate for the filmmaker to include disclaimers about how certain things were shot?

Jeff Turner: Yeah, it's interesting, I've never, I mean there's an argument for and against it. The argument against it is that it breaks, *once you put a disclaimer on a film, then you bring into question everything about that film.* It's like the disclaimer becomes hard and because it could paint the entire way the audience views the whole show. It may just be that one moment, that one particular event in it, which lasts for a couple of minutes in a 60-

minute film, that was the only thing that was done in captivity, but then they might view the entire film in a way that would influence how they enjoyed and perceived that film. So, that's a problem with disclaimers and that's the argument against it in the industry in general. *But I think the question the filmmakers have to ask themselves is, do we do it at all? If you have to put a disclaimer on something then maybe you shouldn't be doing it. We just never show the audience a polar bear cub being born, a very magical moment, a very unique and privileged moment to see, then the question is maybe we shouldn't be doing that if we can't do it in the wild without disturbing the animal, maybe this doesn't belong in any film. So I think that's the question, I would say I don't like it. I mean if you have to put a disclaimer in then maybe you shouldn't be filming that sequence.*

Jeff is not in favour of staging practices which mislead audiences, and as an extension of this attitude, he is not in favour of disclaimers explaining the staging used to achieve those shots. For Jeff, disclaimers run the risk of tainting the entire film with suspicion. It may be unfortunate that audiences are deprived of scenes like the BBC's birth of a polar bear, which he appreciates is "a very magical moment, a very unique and privileged moment to see" but for Jeff, obtaining genuine footage and living up to the trust of his audience is more important for the profession.¹¹⁹ As a filmmaker for blue-chip wildlife productions including *Planet Earth*, Jeff's professional self-identity follows the tenets of observational realism; his notion of acceptable practice within wildlife filmmaking is aligned with his identity as an observer of wild nature in the telenaturalist tradition as described by Gouyon (2011a). In contrast, as discussed above, other filmmakers including Gary Marcuse consider filming animals in captivity to be within the acceptable conventions of wildlife filmmaking.

The Nature of Things senior producer Caroline Underwood is also not in favour of disclaimers, and shares Jeff's concern about how they affect viewers' perception of the entire program. Her reasoning, however, has more to do with the logistics of the disclaimer itself: where and when would it appear?

Caroline Underwood: There used to be a series called... Oh God, what was it? Fifth Estate did a big... [pause]

EL: Cruel Camera?

CU: Cruel Camera. But that was Marty Stouffer, there was another one, there were two series, and they used to put animals together,

EL: Marlin Perkins?

CU: Marlin Perkins. Wild,

EL: Mutual of Omaha's Wild Kingdom.

¹¹⁹ For filmmakers' ethical responsibilities around representing animals in the wild, see Palmer (2010) and Richards (2014).

CU: Mutual of Omaha's Wild, they always had a disclaimer at the very end, in the credits saying, "some of these sequences are based on actual events, but have been reconstructed" or whatever, I don't think anybody ever reads credits. So what are you going to do, are you going to pop it on the screen, in a lower third, at the moment when this lovely little magic moment is happening? Do you put it at the top? *Perhaps you put it at the top if you really wanna be honest about it, but it would perhaps, I think for most viewers, make them wonder, "well which", all the way through the film, "so which part of this was not,"*

EL: Mm-hmm.

CU: *"actually filmed in the wild?" As I said there are so many things that are done it's hard to know where you would start and where you would stop, to say, "this is a constructed reality," cause filmmaking is a constructed reality.*

Caroline takes the broadcaster's point of view in considering the logistics of the disclaimer, imagining its position "in a lower third" [of the screen] while the scene is taking place, risking to distract audiences from "this lovely little magic moment" on the screen, or "at the top [beginning]" of the film, which would call into question the authenticity of the entire program. Palmer agrees with Caroline's assessment that disclaimers are logistically challenging within the medium of film, where "you have to figure out how to be honest about your methods without interrupting the story" (2010, 109), compared to photography where a static caption can more easily label which shots were staged.¹²⁰

In addition, Caroline's assessment that "filmmaking is a constructed reality" relates to the difficulty in deciding which elements of a film require a disclaimer is especially pertinent. This attitude demonstrates Caroline's reflexivity about the wildlife filmmaking profession, reflecting her role as a producer, and offers an interesting contrast to her proclaimed eschewal of staging practices. Caroline is able to identify and reject particular staging practices while at the same time appreciating the constructedness of wildlife documentaries in general. Caroline's attitude is similar to that of some wildlife film scholars, such as Richards (2014), who are critical of particular practices (such as the use of composite animal characters or purportedly misrepresentative editing) while also drawing from the work of documentary theorists who argue that all documentaries necessarily involve construction. As I show from further excerpts from this interview later in the chapter, Caroline's experiences as a producer motivate her assessment of the constructedness of

¹²⁰ Conservation advocate Ted Williams opined in *Audubon* magazine that the potential disclaimer options for photographers and publications who want to improve transparency in wildlife photography are difficult to implement:

Of course, a photo of a tame animal isn't a lie if it is clearly identified as captive [...] But what is full disclosure? Is full disclosure a caption that says "controlled conditions"? What are controlled conditions? Is full disclosure a photo credit that says "captive"? In a few situations, where format precludes captions, maybe that's as close as possible. But credits often go unread. (Williams 2010)

these films. She has learned that successful pitches depend on compelling narratives, that filmmakers require visual storytelling skills, and that during both filming and editing, story provides a focus and motivates filmmakers' choices. The filmmaking process is constructed through these choices.

Jeff Turner's eloquent and self-reflexive description of the audience's understanding of "what the filmmaker is going through" relates filmmaker practices, trustworthiness, and the consequences of individual filmmakers employing staging practices for the industry as a whole:

[22:55] **EL:** As a documentary filmmaker, are there any especially persistent viewer impressions that you've encountered about your work?

Jeff Turner: Probably, what's interesting about natural history filmmaking and the viewer impression of it is, there's an importance that the viewer places on the documentary filmmaker in something, in a way that's quite different than other documentary films, and *I think part of it has to do with the whole idea of patience and perseverance and struggle. There's there's this idea that what the audience sees and when they watch a natural history film, a blue-chip type film, part of that experience is enhanced by the sort of almost subconscious understanding of what the filmmaker is going through in order to capture some of that type of behaviour.* So there's a certain weight put on the fact that somebody had to stand out in the snow for 2 weeks trying to capture that moment or the struggles that he went through to get to the top of that mountain in order to see that particular thing that you wouldn't see other ways, otherwise. And so I think the audience is always amazed by the sorts of things that we we do in this industry in order to capture rare and unique material. And it's kind of, and this is maybe slightly offtrack but I'll mention it now, *there's kind of a trust that you have with your audience, in how you, in what you capture, and how you capture those stories that enhances the experience for them. So, when certain filmmakers break that trust, in other words they use an animal that's not wild, they use captive animals to film a sequence, they cheat in other words, that really destroys, can impact the whole industry in a way, can destroy a bit of the, I can't remember, I can't think of the word I'm trying to use right now but it kind of breaks that trust and destroys some of the aura that's around the whole genre.*

Jeff believes that trust can be violated by employing staged animal footage. In his estimation, audiences' understanding of what a wildlife filmmaker must go through to obtain footage has consequences for viewers' esteem in their work and trust in its authenticity, a theme I explore further in Chapter 5. As a wildlife filmmaker involved in productions which repeatedly allowed him the time to capture genuine footage of wildlife, Jeff's sense of professional identity does not include the taking of staging "shortcuts." Those who "cheat" or "break that trust" are not living up to the professional ideal of the patient filmmaker in the wild recording animal behaviour, someone whose professional behaviour is aligned with the values of Victorian natural history described by Gouyon. Jeff's appeal to the "patience and perseverance and struggle" of wildlife filmmaking

echoes Gouyon's account of wildlife photographer and early telenaturalist Cherry Kearton: Kearton's "virtues of patience, courage, self-sacrifice, and self-restraint" were employed as rhetorical guarantors for the trustworthiness of his films (2011, 36).¹²¹ Even though not all of the interview subjects were as thorough in their descriptions, their shared emphasis on patience and a shared conceptualization of staging as a "shortcut" suggest that they have at least an implicit characterization of the persona of the observational filmmaker.

Andrew Gregg describes the link how his background as a journalist influenced this outlook and returned several times to the importance of honesty:

Andrew Gregg: And I can think of two guys who are colleagues of mine off the top of my head, and I'm not gonna name 'em, who used animals in zoos, and never told anybody. If I was shooting a caribou hunt, and I went to the Toronto Zoo to get a still of a caribou and I cut to a gun firing, I'd never do that. You can't do that. *Cause if you're dishonest once, and you're found out, then you're done.* You know?

[...] Cause I think, having come from a journalistic tradition it's so beaten into you that you have to be honest and not get caught. [laughs]

[...] I think if you're making a traditional documentary, you've gotta be honest. If you're not, then what are you trading in?

Being "honest" for Andrew refers to not engaging in any practices which mislead the audience about the ways in which animal behaviour was generated and filmed. One of the risks of being "dishonest" is that your reputation as a filmmaker will be damaged. By resisting the temptation to engage in "dishonest" practices, filmmakers can protect their reputations. The history of the genre has borne out such a concern. For example, after the several-part *Denver Post* investigation into fakery in Marty Stouffer's series *Wild America*, the series was not renewed by PBS (Palmer 2010, 119-23). It is true, however, that certain filmmakers have cultivated reputations that can withstand this type of criticism; David Attenborough has filmed polar bear cubs in zoo settings repeatedly over the last 20 years and remains the most prominent figure in the natural history community. The situation reflects both Attenborough's authoritative status (Gouyon 2011a; 2011b) and the perseverance of the BBC Natural History Unit's "residual truth claims" (Bagust 2008, 217) in contrast to a broader media context wherein documentary programming's facticity is called into question.

Niobe Thompson, an anthropologist and anthropological filmmaker, also described audiences' awareness of wildlife staging practices affecting their trust in the authenticity of

¹²¹ These same virtues are made prominent in recent profiles of successful, non-interventionist wildlife photographers I describe in Chapter 2.

wildlife footage.¹²² Niobe believes that the trend of revealing how particular shots were achieved, in particular through behind-the-scenes features and making-of documentaries, has influenced audiences' expectations.¹²³ He argues that filmmakers ought to transparently face any criticism of their staging practices, and that audiences are more aware of such practices today.

Niobe Thompson: *I think if there is criticism around staging practices, we have to address it, we have to justify it, we have to justify it transparently, have a discussion about it, I think this behind-the-scenes phenomenon has been incredibly helpful in building trust back up, after a rocky period a few years ago. And you know frankly we just live in a different world than the early years of National Geographic and David Attenborough where the audiences were much more naive and didn't understand the filmmaking process like they do today, where they would take as writ what they were seeing actually happening in exactly the way it happened and there was no editor involved.*

EL: Mm hmm.

NT: I think everyone understands much more now about the filmmaking process, even kids because they can get their hands on the technology and manipulate it and use it and then try to edit together footage themselves; *everyone understands that there's so much construction that goes on in the process of making a film. So I think it's a very serious issue if you lose your audience, if audiences begin to think that it's all constructed, and they're not getting any insight into the way the natural world acts, you know it's a huge loss.* But at the same time, [laughs] we can't forget that that what a viewer loves to do is suspend their disbelief and follow a story. And so that's an incredibly powerful tool, that natural desire to believe what you're seeing and to attach yourself to storyline. I mean, I think you get purists who criticize building anthropomorphic storylines into animal behaviour, right? [40:18] **EL:** Mm hmm.

NT: An example would be all the stuff around meerkats. But you know that doing that is building a bridge between our understanding in the world and those animals, and in the service of caring about the natural world, I think it's justified.¹²⁴

Niobe describes how particular staging practices involving the crafting of anthropomorphic storylines, such as those in the reality TV-style program *Meerkat Manor*, serve to enlist audiences into the broader goal of understanding the natural world, and can therefore be justified from “purists” who would criticize such anthropomorphism. The importance of story, and the role of staging practices in supporting story, are recurring themes for my interviewees that will be

¹²² Niobe Thompson's background is in social anthropology and Russian studies. His films include *Tipping Point: Age of the Oil Sands* (2011), *The Perfect Runner* (2012), and *Inuit Odyssey* (2009) as well as segments for *Frozen Planet* (2011-12) filmed in the Russian Arctic.

¹²³ I explore behind-the-scenes footage and making-of documentaries in Chapter 5.

¹²⁴ Elsewhere in the interview, Niobe described a sequence that he strongly suspected to have been staged: a slow-motion battle between two male desert shrews for BBC's *Wild Arabia*, which would have required intense lighting and potentially the construction of a set. He described how it “made for a beautiful sequence” as the result of “pretty aggressive staging,” but that it was justified thanks to the sequence's contribution to “the cause of creating interest and sympathy and knowledge about the natural world.”

explored later in this chapter. By building stories that attract and motivate audiences, filmmakers can serve both educational and conservation goals, offering “insight into the way the natural world acts” and “caring about the natural world”: staging practices thus work to construct compelling stories which serve those aims. In this way Niobe echoes Palmer’s (2010) position that wildlife programming ought to affect audiences’ attitudes about conservation, as well as his sense that story is an inroad to both interest and action. On the other hand, Niobe’s concerns about viewer awareness about the ubiquity of construction in filmmaking are similar to Winston (2000)’s reminder that all documentaries are constructions, not only those employing staged interventions. In addition, Niobe links viewer assessment of construction to documentary misrepresentation, where constructions can be a barrier to “insight into the way the natural world acts.” This worry is related to the broader literature on wildlife films in which scholars describe how decisions about programming’s pacing or selection of behaviours can lead to a distorted view of the natural world (Mills 2013; Chris 2006; Richards 2014; and particularly Bousé 2000).

One filmmaker requested that an anecdote from our interview describing the inclusion of staged stock footage be anonymized. Prompted by a discussion of the BBC’s polar bear zoo birth controversy, the filmmaker described locating and licensing a piece of stock footage that showed an “amazing visual story” and included “animatronic puppets” that the filmmaker describes as having been composited into a scene. No disclaimer was employed, but the filmmaker rationalized that the staged footage “was a shot” and that its purpose was to “help the scene,” emphasizing that “You can see that it’s not the scene”:

Anonymous Filmmaker: Except if you go back over the script they [the BBC] probably, were very careful to just stay on the razor’s edge, and they probably didn’t mislead, in script, and everything else misled. And I do think, yeah, no, it’s not good. It’s not good. It almost always comes out, too. But, there’s other ones where we, [laughs] we licensed footage of {description of the stock footage} and you’re like, “How did they get that? That is absolutely brilliant!”¹²⁵

[...] But we licensed it [laughs] We used it. And we didn’t do a disclaimer.

[...] I’ve never really thought about it, and I guess maybe, it’s similar to the polar bear story, (this’ll be unattributed, by the way, no matter what I said, for the whole thing)¹²⁶

[...] *It was a shot, you know what I mean, we’re not building a, we’re not seeing a live birth of polar bears or anything like that in a zoo, we are using something that looked really great and really did a great job of, it kind of filled the gap, cause otherwise you just didn’t have it.*

¹²⁵ I have removed identifying details from the filmmaker’s description of the film in question and the contents of the stock footage, to ensure anonymity.

¹²⁶ This is the filmmaker’s request for this anecdote to be anonymized.

[...] And, I could see why they did it and we licensed it, and it was probably expensive, too... But there was no way we'd mention that this was animatronic or anything, it was a great shot, I think there's a difference there. And I think that there's a scale, I'd say there's three things: there is that- and *this may feel like splitting hairs, but it's a shot, as opposed to a scene*

[...] {technical details of the stock footage that the filmmaker believes would indicate to viewers that the footage is staged}¹²⁷ So, yeah, little bit of the, I don't know, viewer beware, perhaps. And I guess the last thing we're not sort of hitting on, what would be the cuddly quotient of like the birth of something like that, where, "wouldn't it be amazing to see that?" Nobody's saying "Wouldn't it be amazing to see {contents of the stock footage}?" No one thinks that, but people would think, "Wouldn't it be amazing to see inside a den?" So you're kind of really capitalizing on an audience with a real, you're driving attention towards that, you know what I mean?

EL: Mm hmm.

AF: You're kind of, *it's a bigger sleight of hand, if you will. Because the whole thing that I'm describing is just, it would help the scene,*

EL: Right.

AF: *You can see that it's not the scene.*

I interpret this filmmaker's request for anonymity as indicative of the strong relation between staging practices, disclaimers, reputability, and filmmakers' sense of professional identity. The filmmaker preferred to not be associated with what could reasonably be considered to be a relatively minor incident of staging, the licensing of a brief shot of stock footage which contained elements that the filmmaker believed would indicate to audiences that the shot was not genuine. Given the historical prevalence of staging in the history of wildlife on film and the contemporary justifications of more extensive staging practices (the use of tame animals, animals in captivity, or the construction of enclosures), as described in discussions about the BBC's zoo polar bear birth episode, this filmmaker's reluctance to be publicly connected to the anecdote offers insight into the severity of perceived potential risks for a filmmaker's reputation: perhaps their statement that "it almost always comes out, too" reminded this filmmaker that staging practices often become public knowledge and can make the filmmaker a target for scrutiny and criticism.

Within the anecdote, the anonymous filmmaker offers three reasons that a disclaimer was not warranted, although the strength of these reasons was insufficient for this filmmaker to be comfortable being connected to an episode of staging. The reasons are that the stock footage was only of a shot, and not an entire scene; that audiences would not have been misled thanks to technical details of the stock footage which the filmmaker believes would reveal immediately that

¹²⁷ The second of the "three things" described by the filmmaker requires elaborating the technical details of the stock footage, which I judged to contain too many identifying details to be included in the transcript.

the footage was not genuine; and the lack of any “cuddly quotient” that would have been relevant in the polar bear cub situation (as in, the filmmaker was not under any pressure to produce footage of cuddly animals). This filmmaker considers staging a shot that “would help the scene” to be a relevant consideration in the acceptability of including disclaimer-free stock footage. In the following two sections, I explore how filmmakers understand their professional motivations to “help the scene” through their collective portrait of the key role of storytelling in their work. First, I show that story is a relevant motivator and *sine qua non* for filmmakers at different stages of documentary production and not an external constraint on what would otherwise be an authentic portrayal of wildlife; next, I describe filmmakers’ descriptions of how staging practices are in service to their storytelling.

The Importance of Story

By definition, nonfiction movies such as these [wildlife documentaries] are rooted in reality and facts, which doesn’t mean the truth isn’t sometimes stretched and distorted. The filmmaker’s key challenge in a documentary is to build a compelling story around the slices of real life the camera can capture. (Palmer 2010, 19)

Wildlife films are stories. Media historian Bousé argued in his book *Wildlife Films* (2000) that they have been overestimated as scientific education and underestimated in their role as entertaining storytelling. He specifies that influences on the wildlife genre, including nature fiction writers and classic Hollywood films, tend to funnel wildlife films into a particular set of culturally-resonant story types, including coming-of-age, romance, and adventure. Making films about animals requires the framing of footage within compelling stories, the inclusion of charismatic scientific voices who can work in service to those stories, and visual storytelling skills. The wildlife and environmental filmmakers and scientists I spoke with understand themselves to be telling stories about nature; appreciating the central role of these stories makes possible a richer critical assessment of their role in science communication. Through their interviews, story emerged as a central, constitutive element of their practice and identity. As a result, filmmakers’ professional experiences undermine prior characterizations of natural history documentaries as purely factual programming (Bousé 1998), of science documentaries being unproblematic to pitch, produce, and broadcast (Bullert 1997), or of narratives interfering with the communication of accurate science content (Chris 2006; Dingwall and Aldridge 2006). Instead, the films they make are crafted as stories, and they understand themselves as storytellers.

Visual storytelling, certainly a key component of contemporary documentary filmmaking, is highly relevant to natural history practices that predate filmmaking. The aesthetic visual elements of natural history greatly contributed to the persona of the naturalist-observer: “deeply ingrained in the Victorian culture of amateur natural history was the idea that genuine knowledge of the natural world springs from its aesthetic visual appreciation and from the close union such aesthetic feelings elicit” (Gouyon 2011a; 28). As I discussed in Chapter 2, visual, aesthetic, and spectacular elements have been essential to the development of both natural history display, including educational features, and for making arguments that advance knowledge within natural history. As a result, framing visuality in opposition to knowledge is therefore a misunderstanding of natural history’s hybrid character. As a result, storytelling should not be considered an impediment to or mediation of the representation of nature in wildlife films, but rather be recognized as a constitutive feature of filmmaking practice (Kirby 2011). Working filmmakers’ articulation of the importance of storytelling reinforces its continued relevance in any treatment of wildlife films and ought to broaden scholarly concerns beyond the better-trod terrain of accuracy and misrepresentation.

Storytelling is fundamental to filmmakers’ professional identity and self-fashioning. They describe themselves as storytellers and promote that trait as useful in their line of work. The professional identity of a wildlife documentary filmmaker is very important for my interview subjects, one which has historically been fashioned around traditional notions of rugged adventure, individuality, and exploration.¹²⁸ In addition to each describing the need for patience and luck, my subjects brought up storytelling ability as a key trait for documentary filmmakers. Caroline Underwood described a need for visual storytelling, or “the ability to think about a story in visual terms,” which she found to be absent from many young filmmakers who have not yet had to learn how to storyboard their work. Filmmaker Gary Marcuse described that he admires filmmakers “willingness to coax out a story” in their work, while Geoff Bowie reiterated that for effective documentary filmmaking, “you should be a storyteller, and learn to be a storyteller” among a list of other traits including empathy, listening skills, and fundraising ability.¹²⁹

¹²⁸ This is well-described by both Mitman (2009) and Gouyon (2011a). For an example of this self-fashioning, see *Figure 3* for Andrew Gregg’s business card depicting a jungle explorer wearing a pith helmet and holding a movie camera.

¹²⁹ Several filmmakers lamented the state of funding for independent filmmaking within the documentary broadcast landscape. Niobe Thompson was especially pessimistic about opportunities within blue-chip natural history filmmaking, despite a heightened demand for documentaries via streaming services: “It’s very difficult to make a

Storytelling ability, and in particular the ability to simplify scientific content for general audiences, may even more important than a mastery of the scientific subject-matter. Niobe Thompson specified that a background in anthropology is less helpful for making an anthropological film than is an understanding of story.

EL: Do you think it's common for filmmakers who work on anthropological topics to also have that expertise on their own, or do they work with experts who are not necessarily filmmakers themselves?

Niobe Thompson: Yeah it's uncommon to see film producers and directors with much of an anthropological training; I can think of some people who do have it,

EL: Mm hmm.

NT: and I think it stands you in good stead if you do have it, but *it's more important to understand how to put across this kind of information in film, so to understand story, and to understand what level to pitch these ideas at so that they're intelligent and interesting and nuanced but not inaccessible*. So having the training is a double-edged sword. You can believe that certain kind of language or certain ideas, information, is interesting for its own sake, when it really isn't. So you know I actually think that it helps me to talk to the experts that I have this background; *it doesn't help me structure the film, it's much harder to figure out how to create a great story out of the anthropological findings we have, than it is to understand those findings*.

[53:28] **EL:** So the storytelling in film is its own kind of expertise?

NT: It is, yeah absolutely. And I can think of examples of film companies and filmmakers who, where there's no particular training in anthropology and yet they've done great work simply because they've taken the time to try to understand the information, the story whether it's the people in the Americas or when Neanderthals met humans, how do you know they've had enough between their ears to come to grips with the subject matter, but they've really sought out the experts

EL: Mm hmm.

NT: And then found a language for communicating that really dense stuff to a general audience, that's the hard bit.

For Niobe, film as a medium requires a story that allows for the communication of effective, accessible information within a story. Such a requirement was reinforced by the perspective of the two science consultants I spoke with: both linguist Ian Mackenzie and geologist Nick Eyles agreed with Niobe, as they each emphasized how the film medium required an effective ability to simplify complex scientific concepts. Ian emphasized that “You have to simplify, I mean the film medium

living in that world. Expectations haven't been reduced, there's still an expectation of great storytelling, committed storytelling that takes place over a long period of time, really being committed to story arcs that take time to develop and are unpredictable by nature, and the expectations you're working with are challenging, but the money isn't necessarily there, so very difficult to make a living on that end.” See p. 116 in this chapter for a longer quote from Niobe containing this excerpt.

is always about simplification” whereas Nick described the importance of simplification in his role collaborating in documentaries.

Nick Eyles continually emphasized that his being comfortable simplifying material for the public, borne from teaching experience and extensive public outreach including taking groups on “rock walks,” was essential for his successful collaboration with *The Nature of Things* for the *Geologic Journeys: World* series.¹³⁰ Within this series, Nick was responsible for the overall story.

Nick Eyles: And I have a, *I suppose my skill is to try and, simplify things? I call it “back of an envelope” things, summarize complex issues very simply* and present them to filmmakers, producers, researchers, so then that series [Geologic Journeys] was successful, and about a year went along and I got another call, saying “we want to do one on the world, do you want to host it?” So we spent the year doing research, *what are the themes and where do we go? And what’s the big story? And that was highly successful, that was Geologic Journeys: World.*¹³¹

[...]

[15:36] EL: How common do you think it is for scientists, in very general terms, to be approached for consultation or for greater involvement in a documentary?

NE: I think it’s pretty rare, actually; they hate scientists, because they don’t think that scientists can simplify things, and they had this image, all liberal arts people, they all see scientists as people running around in white coats, quite literally, and so they’re very loathe to get scientists involved and I found my situation, I had to give scientists involved because we really need to get the expert, and *very often the expert just couldn’t, talk simply about what he was doing without resorting to jargon, and it was really tough to find people who could make what they were doing interesting*, and I found when I was interviewing people that it was easier if I didn’t tell them who I was, what I did; they thought I was a journalist, so they tended to be a little bit more relaxed and you got what you wanted.

[...]

[34:42] EL: And do you think it helped that you were both comfortable in front of the camera and able to simplify the signs that you were trying to get across to the audiences, if you were less comfortable, it might-

Nick Eyles: That you could, you-

EL: -be more difficult?

NE: -couldn’t do it. You couldn’t do it.

EL: Yeah.

NE: *That’s the skill that you need, to simplify something that’s really complicated.* But it’s easier when you know the crew and the director really well, you can have a conversation with them.

¹³⁰ Nick Eyles is a geologist at the University of Toronto Scarborough. He has contributed to multiple documentary films as a science consultant, and acted as on-camera host and science collaborator for the *Geologic Journey: World* series for the CBC’s *The Nature of Things* (2010).

¹³¹ The two series to which Nick refers are *Geologic Journeys* (where he was a science consultant) and *Geologic Journeys: World* (where he was involved as host in a more extensive collaborative role) both for the CBC’s *The Nature of Things*.

[35:20] **EL:** Mm hmm. Did you have much background in that kind of outreach before you got involved in this kind of filmmaking?

NE: *It's teaching. That I do a lot of public lectures, I do one a month basically, so I'm always out there and you know what works, you know what doesn't work, I take field camps around the world, so I'm always having to explain stuff* [laughs] It's just what I do. So that's the extension of what I do in here [gestures around his office], different audience, but bigger.

Nick specified that it can be very difficult for scientists to speak simply about their work, and that in his role as host of *Geologic Journeys: World*, he obtained less jargon-filled responses from the experts he spoke with if he did not reveal his own geologic expertise. Nick's experience supports Carolyn Baker's (1989) assessment of the conversational negotiation between interviewers and scientists who are interviewed for documentary films: Baker describes this negotiation as resulting in a discursive fabrication of the natural world in science documentaries.

Storytelling is important when pitching a project to investors or broadcasters. Without an effective hook, producers cannot envision how audiences will be compelled to care about the film. Pitching project ideas to funders and broadcasters is a key part of the Canadian documentary filmmaking landscape: there is federal and provincial grant money available, but high competition between filmmakers for few spots. Senior CBC producer Caroline Underwood is someone other filmmakers pitch their stories to, and she's among the team who decides which will be funded. Here, she describes how important it is for those pitches to have a compelling narrative arc and a story that will attract and keep viewers. Caroline must consider not only which stories interest her, but also keep the CBC's potential audience in mind.

Caroline Underwood: To be able to think in terms of what is it about this event or [pause] *the bigger narrative arc that would be of interest to viewers? It's not only is it of interest to me, but what is it that will draw a viewer in and keep them actively engaged and curious about the story as it is, as it unfolds over the whole hour?*

Filmmakers understand that pitching requires presenting ideas in terms of stories. In the following quote, Kenton Vaughan describes how *The Nature of Things* funded his pitch about the story of the reintroduction of black-footed ferrets to the Canadian prairie:

Kenton Vaughan: I had approached The Nature of Things with a number of ideas, and in this business what you do is you always approach a broadcaster with a number of ideas knowing that you're lucky if they pick one, [...] *And much to my surprise, the story that they wanted to make was the reintroduction of black-footed ferrets* so I found myself having committed myself to making a film about nocturnal animals that live in holes. Which was crazy.

For Kenton, the result of the story of black-footed ferrets being the most compelling story for the broadcaster meant that he now faced the practical and logistical challenges of making a film “about nocturnal animals that live in holes”; these challenges relate to the production’s ability to obtain footage that could visually support the story he wanted to tell. As a producer, Caroline would have to weigh those stories in terms of their likely engagement of viewers in the narrative.

During the actual making of a film (principal photography, editing, and post-production), story is paramount (Kirby 2011). The crafting of a compelling story guides their decisions about what type of footage to acquire and how to assemble footage that on its own is ambiguous. At various stages of film production, my interview subjects consider the importance of narrative and story consequences for their filmmaking choices, and they were consistent in referring to finding stories and telling stories when they described these practices. Here Caroline describes the need to have a focus for the story when shooting on location, even though the unreliability of animals as film subjects can make that challenging.

Caroline Underwood: *Well we do have a script, we have a story, because you absolutely need to have some kind of focus for your filming,*

EL: Yeah.

CU: You need to know why you’re in this place, it might be that you don’t get what you want, all of the time, but you do have to kind of go out with a goal in mind.

The need for a story holds for documentaries with animal subjects, even those that are considered to be “natural history documentaries” with a focus on describing and explaining animal behaviour and not only in wildlife films with a stronger narrative or character-driven element. Films on natural history topics nevertheless must make narrative arguments and employ footage as evidence about animal behaviour. For example, Crowther (1995) has classified conventional natural history programming into three main story structures: animals’ birth-to-parenthood life cycle (which emphasizes male competition and female reproduction), the male naturalist’s quest for discovery, and the triumph of science (particularly male scientists) over a mysterious “mother nature” (1995). Davies interprets these story structures as positioning wildlife filmmaking within “a wider set of cultural codes, which are central to the study of science and the media” (1998, 42). Filmmaker Niobe Thompson, whose own work focuses on footage of human cultures, described the need for a narrative even in natural history filmmaking, and the particular challenges of natural history storytelling that rely on the cooperation of unpredictable animals.

[3:15] **EL:** Speaking I guess a little more broadly than your own experience, if you haven't had a lot of experience filming animal subjects, what would you think would be the differences, or how would you compare filming human and animal subjects?

Niobe Thompson: First of all, *there are similarities, which I think would surprise even regular viewers of natural history documentary, I mean you're looking for narratives in animal nature documentaries* just as you are in documentaries about human culture, human beings.

[...]

It's very difficult to make a living in that world. Expectations haven't been reduced, *there's still an expectation of great storytelling, committed storytelling that takes place over a long period of time, really being committed to story arcs that take time to develop and are unpredictable by nature, and the expectations you're working with are challenging*, but the money isn't necessarily there, so very difficult to make a living on that end.

For Niobe, the successes of recent blue-chip wildlife filmmaking mean that heightened expectations affect documentary filmmakers, whose audiences and broadcasters require “great storytelling” and not only the strength of individual footage. Caroline described that natural history programming requires “some kind of focus for your filming” as a goal for working filmmakers, even though, thanks to unreliable animal subjects, “it might be that you don't get what you want, all of the time.” Niobe also specified that natural history documentaries require “looking for narratives” the same way that documentaries with human subjects do, compounding the challenges for natural history filmmakers, because filmmakers have no guarantee of being able to obtain the particular animal footage needed for their story.

These perspectives reinforce Palmer's assessment that “The filmmaker's key challenge in a documentary is to build a compelling story around the slices of real life the camera can capture” (Palmer 2010, 19). There are certainly different interpretations of what filmmakers and broadcasters mean by “story”: more experimental forms of documentary craft story and narrative in different ways through different formal conventions.¹³² Mainstream broadcasters require more conventional storytelling arcs that respond to timed commercial breaks and structure (CBC 2018). Despite storytelling coming in different stripes, however, documentaries on environmental, scientific, or wildlife topics are not exempt from telling a story. My interview subjects have demonstrated the importance of story to their filmmaking and communication practices.

¹³² The French New Wave experimental director Jean-Luc Godard's often-quoted aphorism to this effect is “A story should have a beginning, a middle and an end, but not necessarily in that order.”

Staging in Service to Story

[...] you're carefully selecting what you see, that's the point. Everything you do is a selection. It's your story. You're selecting, now if you've actually inventing things that don't exist or couldn't exist, then that's dishonest. But of course you're going to select the things that you want to tell your story. (Ian Mackenzie interview)

Earlier in this chapter, I describe the prevalent attitude among my interviewees that staging is a shortcut to generate particular footage. Here I show an elaboration and specification of that theme that is helpful for any examination of filmmakers' choices and practices: that staging is in service to storytelling. In the previous section, the filmmakers described a strong sense of storytelling as a central aim of wildlife filmmaking; in this section I explore the variety of ways filmmakers describe staging practices as being in service to that aim. These include the use of staging to obtain footage that is required for the story, the careful selection and editing of footage to generate a particular narrative (and conversely, the exclusion of footage that is unrelated or would undermine that story), and the ways in which documentary filmmaking constructs a story.

Gary Marcuse has been especially clear about the link between his filming panthers in a zoo, a common practice in the wildlife genre that has been criticized for its lack of transparency for viewers (Watson 2011), and the overall story in his film about the work of research biologists. As a result, he has come to terms with filming animals in captivity, because the footage is in service to the stories his film tells about biologists.

Gary Marcuse: *But really what I'm doing there was capturing stories of the wildlife biologists and their championing of the species, and so a lot of the animal behaviour was stock shots, of animals, either in captivity or in the wild, and I've mixed feelings about the technique but generally speaking I'm very positive about it [...]*

Both Gary's filming animals in captivity, and the anonymous filmmaker's use of stock footage which was described as "help[ing] the scene" are examples where staged footage was used to advance a film's story. The filmmaking decisions to include stock footage become more understandable when such story motivations are taken into account. It is not simply the case that animals are difficult to locate and expensive to film in the wild; *in addition*, the inclusion of this footage is a requirement for enhancing the story. Staging may be broadly interpreted as a shortcut, but the ultimate motivation for that shortcut is not obtaining the staged footage for its own sake, but rather to contribute to and advance the film's narrative. Forgetting this role for staging means we are likely underestimating the importance of story, of the need to engage audiences, and of the essential character of wildlife documentaries as entertainment. This analysis motivates wildlife

film scholarship to overcome its primary focus of misrepresentation, as advocated for by Richards' call for broader analyses that move beyond an "obsession with audience deception" (2014, 333).

Of course, filmmakers employ particular staging practices for the sake of story other than the use of stock footage. Kenton Vaughan described the narrative requirements for his film *Return of the Prairie Bandit* about the reintroduction of the black-footed ferret to the Canadian prairies. He explained that wildlife footage on its own can be ambiguous, and must be edited in a way that is compelling to audiences. He understands this story work in terms of its "imposing" an educational scientific explanation on that footage:

Kenton Vaughan: one of the challenges we had with the ferrets is, and what I learned with the ferrets and in working with *The Nature of Things* and doing my first wildlife film, *is that what you capture on film is just an animal doing stuff, running around, and you have no, unlike humans, where you can ask them what they're doing, what they're thinking, you have no idea what an animal is actually doing.*

[...]

at the end of the day you just have this footage of ferrets running around. So what we had to use narration to impose on the footage, the behaviours, so we have a scene of the ferret hunting, but when we filmed that did we actually know the ferret was hunting? No. But the behaviour matched the described behaviours in the research, so we could impose on that footage, what we assumed to be the behaviour. If you actually watch the film you can pick out, you know there's a section on each sort of thing.

[...]

we had to impose things on our footage, at the narr- at the scripting level, right? So how different is that from using tame animals? Do you know what I mean? We don't know for sure that ferret was running around, you know, zig-zagging because it was trying to avoid an owl, but we imposed that on the script level. So how different is that from using tame animals? But on the other hand, we presented the real ethology, behavioural, science, what we presented was scientifically accurate, in terms of, this is how black-footed ferrets behave, this is what they do.

Kenton repeatedly asked "so how different is that from using tame animals?" suggesting that his understanding of the need for narrative imposition was that the practice is not entirely dissimilar to using tame animals or filming animals in captivity. He then justifies the educational merit and scientific accuracy of the narration. Kenton's justification is similar to the BBC's description of its natural history staging practices, emphasizing the accuracy and educational mandate of their programming (BBC 2008).

Not only did Kenton understand the scientific narration as an imposition, but he used the same term to describe emphasizing an emotional narrative arc that allows audiences to better

connect with what they're viewing.¹³³ He describes how challenging it was to get the audience to connect with the story in his film *Return of the Prairie Bandit*:

Kenton Vaughan: when we were doing test screenings of the ferret film, we'd show it to a number of people, but then at the end of it their reaction was, why should we care? Why should we care about these ferrets? *Trying to create a reason for the viewer to care about the fate of the ferrets was incredibly hard.* And what I actually did is I watched the beginning of *March of the Penguins* and the beginning of *March of the Penguins* is something about, every, or once a year or part of their life penguins do something incredibly stupid and reckless: they fall in love. And then *the emotion of love immediately imposes on a creature an emotion, a human emotion, which the audience can identify with, so basically that's what I did, if you look at the beginning of that film, I say: 'There is a creature so mysterious in the prairie, hardly anybody has ever seen it, but once they do see it, many fall in love.'* And being able to impose that emotion on the material we found was necessary for the audience to actually sympathize with the character.

The initial screenings did not have a compelling enough narrative to hook his viewers, who did not understand why they should “care about these ferrets.” Kenton started describing the ferrets as a creature many people fall in love with and this description allowed his viewers to connect emotionally with his story. The film was marketed and advertised following that description. Engaging the audience and having viewers connect emotionally with the narrative of the film was a significant challenge, and Kenton repeatedly describes this emotional manoeuvring in terms of imposing a narrative arc on the footage. Similar to his conception of scientific narration, the use of particular emotional narration nudged viewers toward a certain reading of the film: that these ferrets are loveable.¹³⁴ Without it, their market research indicated that the film's message was ambiguous and left viewers confused about why they ought to care about Kenton's animal protagonists.

Not only can footage be ambiguous without the clarifying and focusing role of a narrative, but the filmmakers I spoke to described how storytelling motivations also affected the editing and selection of footage that would appear within the film, and the exclusion of footage that did not support the story. For Niobe Thompson, even “extraordinary things” would not make the cut into

¹³³ Narrative, either scientific or aimed to emotionally influence viewers, is not employed within the documentary mode of observational realism. I discuss this mode further in Chapter 5.

¹³⁴ It is difficult to speculate about viewers' actual experiences of particular documentary programs, although my interview subjects described getting a sense of viewers' impressions through talking to them at film screenings and receiving letters and emails. Palmer (2010) describes similar challenges in determining the precise and isolated impacts of wildlife programming on audiences' attitudes and conservation-related behaviour. Austin's *Watching the World* (2007) contains qualitative survey results of wildlife documentary viewers, revealing a diversity of attitudes towards this programming. More recently, Ivakhiv (2013) examined online reviews of *Planet Earth* to examine viewer attitudes about the beauty of the series. I explore these issues further in the Conclusion of this dissertation.

a film if they could not be connected enough to the overall story. Niobe describes the need to relate footage to story aims in terms of his anthropological filmmaking:

Niobe Thompson: I mean there's lots and lots of occasions where sequences that involve humans, I've decided for one reason or another not to put on the screen.

EL: Can you talk about any examples in general of that, from filming humans?

NT: *The first consideration is always, does this footage advance the story? Because what you find is you go out into the field and you film extraordinary things that just don't have any relation to the story you're telling, so that's the first filter.*

[22:22] **EL:** Right.

NT: But then you know *it's really important that your imagery can support the cause of enlisting the interest of the audience and compelling them in some way.*

Niobe refers this story criterion as both the “first consideration” and the “first filter” for deciding whether a sequence will be included in the film. The included footage must perform a particular role in terms of its ability to “advance the story.” The authenticity of the footage, even of spectacular footage, is not enough to merit its inclusion if the footage is not related enough to the story the filmmaker is attempting to tell.

Similarly, Caroline Underwood describes how this same practice of selection of particular footage to support a desired story can have real consequences for our impressions of the species in question.¹³⁵ She uses the examples from the wildlife genre of lions and baboons being represented as more violent and male-dominant than they are in the wild based on footage of those behaviours being disproportionately included in wildlife films:

EL: As a documentary filmmaker, are there any especially persistent viewer impressions you've encountered about your work, or your field of work?

Caroline Underwood: About my field of... I think you know the, it's discussed much less now than it used to be but *wildlife filmmakers for the longest time, nature-red-in-tooth-and-claw sequences featured very prominently, so I think in the storytelling and on certain other broadcast networks they still do, because partly it does attract an audience, but it has led to viewers thinking that that's the way the animal world is, and I think some species suffered more from it than others.* So things like lions, everybody thought that a lion's life, or a pride's life was essentially dominated by males and it was all about hunting, and then *broadcasters I think were eventually convinced that there was perhaps a more interesting story to tell, and that is it's the females that hunt, and lions like most big cats spend about 90% of their time sleeping. But if you came from Mars and you watched television you would think that lions were bloodthirsty indiscriminate killers, who were always fighting for dominance.*¹³⁶ Same with baboons, they suffered terribly from that particular view that there was a male-dominated violent society.

¹³⁵ Palmer describes this tendency as “fang TV” (2010, 145).

¹³⁶ Interestingly, this parallels the changing narratives informing the study of primates within the history of primatology as described by Haraway in *Primate Visions* (1989).

Caroline describes how the inclusion and prominence of these sequences, and the corresponding exclusion of footage of lions performing less exciting activities, was motivated by a “nature-red-in-tooth-and-claw” storyline approach on the part of filmmakers and broadcasters, which served to mislead audience members about not only the frequency of lions hunting compared to being at rest, but also about the normal set of behaviours of female and male lions.¹³⁷ Much similar criticism has been levelled at wildlife films representing only certain subsets of behaviour as naturalized, especially violence, aggression, and traditional sex, gender and parenting roles (Palmer 2010; Aguayo 2008; Chris 2006; Mills 2013).

Anthropologist and documentary filmmaker Ian Mackenzie, who collaborated with Andrew Gregg on *The Last Nomads*, a film about the previously-nomadic Penan people of Malaysian Borneo, describes very well the relation of staging practices to storytelling.¹³⁸ Based on his experiences in environmental and anthropological filmmaking, he relates the need to select footage into a story, and how that selection necessarily involves the possibility of mischaracterization.

Ian Mackenzie: It’s like film photography, this whole thing about media manipulation and adding things, photoshop and all that, but it’s my impression of photoshop being good or bad, it’s like what you do. And even in the old days you would dodge and burn, even a hundred or more years ago, the image you produced was not actually what you saw, in a sense, *and besides, you’re carefully selecting what you see, that’s the point.*¹³⁹ *Everything you do is a selection. It’s your story. You’re selecting, now if you’ve actually inventing things that don’t exist or couldn’t exist, then that’s dishonest. But of course you’re going to select the things that you want to tell your story.* If you want to tell a story about happy people, even if you shoot people who are angry, you are not going to put them in the film. [37:36] **EL:** Right.

IM: But if it’s a story about angry people, then you put them in the film. *So, when you’re actually creating a reality that doesn’t exist or couldn’t exist, that is wrong, and that is dishonest.* But, it’s like in *Nomads of the Dawn*.¹⁴⁰ There’s one picture I took of these 2 young men, one of the most beautiful shots, 3 young men in front of a waterfall, one holding a blow pipe and they’re just wearing loincloths, and you know the fact is that, even back

¹³⁷ See Chapter 4 of this dissertation for a discussion of the consequences of disproportionate sampling in the ways wildlife films simulate behaviour.

¹³⁸ Ian Mackenzie is a linguist (specifically, a lexicographer), ethnographer, nature photographer, and filmmaker. He has been involved in two anthropological film projects: his documentary on the Moi people of New Guinea, *Cry of the Forgotten Land* (1995), and his film collaboration with Andrew Gregg about the Penan people, *The Last Nomads* (2008).

¹³⁹ Dodging and burning are photographic techniques used to selectively darken or lighten certain areas of a print by altering their exposure during development.

¹⁴⁰ *Nomads of the Dawn: The Penan of the Borneo Rain Forest* (1995) is Mackenzie’s book about the Penan coauthored with Wade Davis and Shane Kennedy.

then, young men of that generation you'd seldom see wearing the loincloth but they do sometimes when they go hunting, because it's better in the rain, or when it gets wet, doesn't chafe, so you know they could have gone out hunting wearing loincloths. So I could have had them wearing some ugly clothes and it would have been an ugly picture

[...]

IM: You know so it's just about intent, I mean, everything about filmmaking and book writing for example, it's you are in fact manipulating your reader or your viewer. And the reader, the viewer wants to be manipulated, that's why you enjoy it, that's why the film is good. *So, but do you do this with integrity, or do you tell a lie? I mean that's the issue. It's not so much actually what you do, it's the intent behind it. And you can't make stuff up, you can't make people something they aren't, but it's not wrong to select those aspects of the culture that you want to emphasize,* what the film is about. You can't say everything, I mean film is a simplistic medium, and in a book you can have a much richer experience, and that's why I said the filmmakers, one of the reasons I can't make a film about the Penans now is that I know too much.

[40:05] EL: Right

[...] *You have to simplify, the film medium is always about simplification, so you take a particular story but as long as you're not lying, you're allowed to tell a story that you want to tell.* And, ok, people as I said being gullible might jump to the conclusion that since the film shows smiling people that the people are always smiling but over-cynical people like me know that's not the case.

Ian reiterates that filmmakers are allowed to emphasize the aspects of what they see and film which will contribute to the story, even if those aspects do not mirror the experience of being physically present and witnessing events at the same frequency.¹⁴¹ He returns to the theme of filmmakers telling the story they want to tell, when he explains that “Everything you do is a selection. It's your story”; that “of course you're going to select the things that you want to tell your story”; and that “you're allowed to tell a story that you want to tell.” Under this view, it's unreasonable to expect filmmakers not to make selections. For Ian the issues of selecting and emphasis are related to the overall history of photography, thanks to the techniques like dodging and burning available to photographers. Just as every part of a photographic print must have some level of exposure, every moment of a film contains some piece of footage that has been selected. For Ian, staging sequences that would not otherwise occur is not allowable. He considers it “wrong” and “dishonest” because

¹⁴¹ The temporal compression of wildlife film editing is the target of criticism for many wildlife film scholars, most notably for Bousé, who considers them to be unrealistic compared to the “experiences of serenity and quietude” (2000, 4) to be found in experiences of real nature. This position has been criticized by Ivakhiv (2013) who claims that Bousé's expectation of peaceful natural experiences reflect particular assumptions (for example, that nature is a setting for leisure and contemplation, and not for labour or physical hardship) and not anything intrinsic about nature. In addition, temporal compression is not merely a result of commercial interest in a fast-paced story: Mitman (2009) described how the field of ethology's focus on discrete, instinctual behaviour led to ethological filmmaking's representations of a more active and compressed natural world. I further discuss temporal compression in Chapter 4.

in such cases filmmakers “make stuff up” and “make people something they aren’t.” Selective emphasis (akin to dodging and burning in photography) is distinct from that kind of dishonesty, because “it’s not wrong to select those aspects of the culture that you want to emphasize.”

Niobe Thompson offers more concrete examples of filmmaking practices that contribute to the construction of a story, while describing his impression that audiences are aware of the construction involved, thanks in part to the rising prominence of behind-the-scenes material:

[25:44] **EL:** As a documentary filmmaker, are there any impressions of your work or your profession that are especially persistent?

Niobe Thompson: Any viewer impressions, well, yes [laughs] just trying to do an inventory... I think that audiences are always surprising me with their sophistication. So, I think television audiences, even children, understand that no matter how honest we try to be with the portrayal of a culture or a particular encounter or situation, *filmmaking is a process of constructing a story*, and so, deal with that; we spend a lot more time and energy than we used to making behind-the-scenes mini-documentaries.

[26:51] **EL:** Right.

NT: *because we know through experience that just because you understand that a sequence is somewhat constructed, doesn’t lessen the interest for the audience. In fact people love to go along with the story you’ve constructed, whether you’re moving events in time to make a more linear narrative, or excluding certain parts of an encounter, they love the story you’ve constructed and they’re also interested in going behind the scenes. Letting the audience behind the scenes doesn’t lessen the power of the actual film. In fact it sort of feeds into the interest audiences have in a film.*

The examples of “moving events in time” and “excluding certain parts of an encounter” while constructing a story fall into the same category of selective emphasis that Ian Mackenzie considered to be justified, and for Niobe these techniques enhance viewer interest to the extent that behind-the-scenes sequences, which outline some of the elements of that story construction, make it even more compelling. Ian and Niobe’s characterization of the necessity of this kind of selective emphasis resonates with the practices of the truth-to-nature sage in natural history image making, whose illustrations depicted not the peculiarities of any one specimen but emphasized the relevant characteristics of the species (Daston and Galison 2007).

Describing staging as a way to enhance the story of a wildlife film adds context and dimension to the motivations and practices of filmmakers, making possible a more nuanced appreciation of the role of entertainment in these complex cultural products. Instead of seeing staging as merely a shortcut to particular footage, or an artificial method to attain the same authentic animal behaviour that a filmmaker with more time, money, or luck could accomplish without staging, these filmmakers describe story as a central aim, motivating particular staging

practices and orienting their decisionmaking wherein constructing stories is an inescapable feature of filmmaking.

Conclusion

Wildlife filmmakers operate within the tension between the educational mandate of providing authentic footage of animals to viewers, the practical constraints of obtaining that footage, and the *sine qua non* of filmmaking: storytelling. My interview subjects exhibit a diversity of experiences and attitudes with regards to staging. They share a general conception of staging as a shortcut to achieving particular sequences, but they disagree about which categories of filming practices and techniques count as staging, which are permissible, and which ought to be disclosed to viewers. Most of them were aware of either recent admissions of staging in wildlife films or referred to historical staging trends, and their attitudes toward the topic tend to be highly relevant to their sense of professional identity. Some of my interview subjects were comfortable expressing disapproval of the staging practices of others, especially those which harmed wild animals, while some were hesitant to judge without having been privy to others' editorial decisionmaking. One filmmaker assumed that for the spectacular visuals in the "blue-chip" tradition of wildlife films, constructed enclosures would be standard practice, another interpreted his own work filming animals in captivity as acceptable staging considering its widespread use as a convention of the wildlife genre. Perhaps most tellingly, one filmmaker requested that I anonymize an anecdote involving the use of staged stock footage, not wanting to be associated with even a minor episode of staging. The filmmaker's request is strong evidence of a nontrivial link between staging, professional identity, and filmmakers' reputation. The filmmakers were also divided on the issue of whether disclaimers ought to be included in programs containing staged footage. Although my interviewees may not be representative of all wildlife documentary filmmakers, they offer a spectrum of views and experiences that is highly revealing of the diverse and ambiguous ways in which staging practices are understood by working filmmakers.

The various staging, narration, and editing techniques that these filmmakers describe as being for the sake of a coherent story have continuity with the epistemic virtue of truth-to-nature (Daston and Galison 2007) in that their practitioners draw from their extensive experience and judgement to justify their selective emphasis of aspects of the natural world within their documentaries. Even footage acquired through comparatively non-intervening filming practices

by filmmakers whose professional self-identity is as objective observers of nature must be assembled in a way that is compelling for audiences; for such filmmakers, their footage constitutes “slices of real life” (Palmer 2010, 19) which support their authenticity and trustworthiness as filmmakers. Even though wildlife and environmental filmmakers use photographic footage and not illustrations, truth-to-nature considerations still influence the final product: intervention and selective emphasis are endemic to the history of photography regardless of its positioning as accurate and bias-free (Wilder 2011, 365). For example, Alex Pang describes how the aims of mechanized scientific photography, intended to bypass the potential biases of human judgement, nevertheless involved interventions at every stage of photography (1998, 224; see also Wilder 2011, 351).

My interviewees’ descriptions of their practices and professional self-fashioning indicates that contemporary wildlife and environmental filmmaking is another setting in which the persona of the observer of nature is relevant to the practices of image-making and the rhetorics of authenticity in public natural history. In the same way that Daston and Lunbeck describe how “the evidentiary weight of the observation is intertwined with the personal credibility and skills of the observer” (2011, 115), contemporary filmmakers understand the consequences of their practices and choices about transparency on their presumed trustworthiness in offering images of nature to their audiences. Their attitudes reveal that there is no commonly-held definition of which practices constitute unacceptable interventions and which are acceptable observations. Indeed, as Daston (2008) reminds us, the boundary between observation and intervention activities in the sciences has never been fixed; its apparent fixity was the result of the growing interest in experimentation by scholars in the history and philosophy of science.¹⁴² For Daston, this scholarly trend has led to the unfortunate neglect of observation despite its historical ubiquity; observation had been “practiced, theorized, and celebrated in almost all sciences” (2011, 101-02). Studies of observation within its specific historical contexts contribute to the appreciation of its situated and culturally-

¹⁴² See especially *Representing and Intervening* (Hacking 1983) for a key example of this turn away from theory and toward experimentation; Franklin described “Intervening,” the second section of the work, as “the first book length discussion of the philosophy of experiments since Francis Bacon” (1984, 381). Hacking’s focus on experimentation contributes to an entity realism related to scientists’ ability to use and manipulate one entity within an apparatus (such as an electron microscope) to intervene on other, “more hypothetical” phenomena (1983, 265).

influenced characteristics (Daston and Lunbeck 2011) as well as the blurred rather than firm boundary between observation and intervention/experiment (Terrall 2011; Wilder 2011).¹⁴³

A key feature emerging from my interview results is that story is implicated in most aspects of wildlife film production, and has a central role, feeding back on how a film is pitched, filmed, edited, marketed, and on filmmakers' professional identity. The scholarly examination of scientific content in popular entertainment needs to take its role as storytelling seriously, even in nonfiction modes. I have shown in this chapter how important that role is for filmmakers in practice. Stories are central to the professional self-image of wildlife filmmakers; they understand themselves to be telling stories about nature, and need to consider how compelling those stories are at different stages of production. Staging practices are not only shortcuts to individual sequences of footage, but are employed in the construction of storyline. Appreciating the central role of story makes possible a richer critical assessment of wildlife films and is a corrective to other approaches that see story as only a constraint on accuracy.

¹⁴³ Wilder, in her case study of Becquerel's photography, asserts that his visualization techniques undermine "the dichotomies alleged by many late nineteenth- and early twentieth-century scientists and philosophers of science: passive observation versus active experimentation, and subjective versus objective forms of representation" thanks to the permeability of the categories of "photographic visualization, observation, and experiment" (2011, 352).

Chapter 4

Animal Stand-Ins: Representation in Blue-Chip Wildlife Films

Introduction

In Hayles' "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World," the author troubles the notion of an easy distinction between simulation and nature: "What counts as natural? Can we consider Yosemite National Park an embodiment of nature? If so, then nature is synonymous with human intervention, for only human intervention has kept Yosemite as a nature preserve" (1995, 410). The same types of plants and animals that once dwelled in wild, unmanaged spaces potentially inhabit national parks, and these parks satisfy urban denizens' desire to experience some kind of authentic nature. Nevertheless, such parks are the result of human intervention and management, and thus seem eligible for inclusion within the category of simulation for Hayles.¹⁴⁴ And despite visitors' physical wanderings within national parks, Hayles describes such experiences of nature as "constructed," rather than "firsthand" thanks to their overwhelmingly visual character:

When 'nature' becomes an object for visual consumption, to be appreciated by the connoisseur's eye sweeping over an expanse of landscape, there is a good chance it has already left the realm of firsthand experience and entered the category of constructed experience that we can appropriately call simulation. (1995, 411)

Hayles' insights can remind us of the stakes involved in another site of "simulated" nature, wildlife films, which offer visually spectacular footage of organisms in purportedly "natural spaces, but are the result of human interventions and are designed for visual consumption. This chapter explores the wildlife film as one such space, one that has historically been made possible through interventions that have been hidden from the viewer. Wildlife films reflect cultural categories as

¹⁴⁴ Much of the literature on the history of national parks and wildlife preserves focuses on the changing approaches to the scope and degree of their management, including its various scientific underpinnings: see Burnett (2003); Loo (2006); and Mitman (2009). The segregation of people from protected spaces, and its consequences for local populations, is of particular interest to Sheail (2010) and Saberwal, Rangarajan, and Kothari (2001). Literature on preservation also focuses on the ongoing efforts and choices required to preserve particular species and not others; see Mooallem (2013); Mabey (2005); and Adams and Carwardine (1991). The rise of natural history museums as a site for biodiversity research and education means that they have joined zoos and wildlife parks as settings devoted to the conservation of endangered species; see Davis (1996); Fortey (2008); Thackray and Press (2013); Yanni (1999); and Flinterud (2013). Hanson describes the rise of the American zoo as a conservation site, a "middle ground between the wilderness and the city" (2002, 2); for zoo design and conservation, see Polakowski (1987). The concept of a pristine wilderness, and the ramifications thereof, were described in Chapter 1, and will be treated more fully later in this chapter as well as in the Conclusion of this dissertation.

well as the natural capacities of wildlife subjects. As a result of both these interventions and of the characteristics of the wildlife film genre, the wildlife showcased in these films is made to represent a variety of entities.¹⁴⁵

I argue that representation occurs through the three prominent but distinct types of footage of wildlife: display, illustration, and demonstration. Based on shared conceptual concerns, I then turn to efforts in the philosophy of science to characterize these representations as both models and simulations of their targets. I focus on the technical distinction from extant literature where models are described as “standing in” for phenomena, involving idealization and abstraction. Simulations, which also “stand in,” are also considered to “act out the behaviour” of phenomena. Considering wildlife films as simulations allows a better characterization of phenomena related specifically to recalcitrant animals: confoundment of filmmakers’ expectations, and the reenactment of behaviour. I conclude by discussing two alternatives to the conventional blue-chip representations of wildlife films in their cultural role as a significant purveyor of animal representations: streamed footage from static cameras, and crittercams. This comparison emphasizes the distinctiveness of the blue-chip renaissance as a simulation of nature that offers viewers a curated liveliness.

For the structure of this chapter, I follow both the blue-chip renaissance’s mastery of scale and the example of Anna Lowenhaupt Tsing’s *The Mushroom at the End of the World* (2017). Tsing’s investigation into the cultivation, science, and cultural meanings of matsutake mushrooms wanders across her international ethnographic sites; her writing deliberately mirrors the dispersals and trajectories of the fungal spores of her inquiry. I offer my own progressive magnification of a landscape, albeit a conceptual one. I follow wildlife footage from its broad conceptual identity as scientific representation more generally and zoom in to its more particular identity as a model, then characterize and specify it further as a simulation. Within my treatment of wildlife film footage as scientific representation, I zoom in from analyzing footage of displayed landscapes to a close-up on demonstrations of individual behaviour. Before beginning my representational

¹⁴⁵ By “wildlife” I refer to both animal life and vegetation. Although the strong majority of behaviour shown in wildlife films is animal behaviour, I include plant and fungi activity (which may or may not be considered “behaviour”) in the term “wildlife behaviour.” A minority of footage in blue-chip wildlife films consists only in vegetation, but panoramic shots of jungle and forest exemplify many new filming techniques. In addition, the use of time-lapse photography allows for footage of the rapid growth and development of plants on film. See especially *Planet Earth*, episode 1, “Pole to Pole,” which features a sped-up year in the life of a forest meadow.

taxonomy, however, I pause to better motivate the connection between wildlife films and models and simulations.

Motivation: Why Models and Simulations?

At the outset, there are several benefits to unpacking the range of “standing in” relations by considering the representation at work in blue-chip wildlife films as scientific models. First, it broadens the analysis from Chapter 2 that wildlife film spectacle is an iteration of natural history display. Next, it treats the *educational* mandate of wildlife films, while previous chapters argued for the essential features of its entertainment mandate. Educational content does not appear fully-formed, but depends on the same practical concerns that affect scientific modelling. Lastly, this work brings questions of the accuracy of wildlife films into the conversation of model choice and scientific representation. Under such a view, elements that at first glance appear to be commercial constraints on accuracy, such as time compression, can be assessed alongside comparable and essential techniques from the life sciences’ visualization practices.

Framing wildlife films within scientific modelling illuminates a key concern: accuracy. As I showed in Chapter 2, worries about accuracy and misrepresentation have significant presence within wildlife film scholarship, to such an extent that Richards has characterized this research as “an obsession with audience deception” (2014, 333). The possibility of misrepresentation depends in some way upon relations of representation (Frigg and Nguyen 2016). Unfortunately, scholarly treatment of wildlife films’ misrepresentation does not always proceed with enough conceptual clarity. For example, in Richards’ paper “The Wildlife Docusoap: A New Ethical Practice for Wildlife Documentary” (2014), she asks for a shift from a “triangle” of representational relations (between animal, filmmaker, and audience) to a simpler focus on the two-way filmmaker-animal ethical relation. She nonetheless claims that this binary involves consequences for species based not on any interactions with filmmakers or any impact of film crews’ presence on animals, but due to animals’ filmed representation. It does not seem reasonable that animals could be impacted by the mere existence of filmed representations of themselves unless the filming or viewing of animals alters the lives of those animals in some way. But Richards does not notice this consequence of her reasoning about representation. As a result, I see a need for greater conceptual clarity in scholarship about wildlife film representation.

Fortunately, the history and philosophy of science offers a toolkit for explorations of the concept of representation. In the philosophy of science, there has been a longstanding interest in scientific representation, where models recently reached a state of “prime importance” (Frigg and Nguyen 2016). Currently there is significant scholarship on scientific models of all kinds, offering an opportunity to explore what it would mean to interpret wildlife films as models. In addition, the history of the sciences offers helpful case studies and analyses of a wide variety of models in practice: those used for scientific research, for pedagogy, for public consumption, or in a variety of combinations (for example, de Chadarevian and Hopwood 2004). These bodies of work motivate my attempt in this chapter to describe wildlife films as models and to unpack how footage in wildlife films stands in for a variety of entities. I see the work of this chapter, which unpacks wildlife films’ standing-in representations, as supporting scholarship within the fields of animal studies, media studies, STS, and environmental history that questions how representations of nature influence our relations with actual living things. Richards’ above example, which makes ethical demands on filmmakers but is undermined by unclear conceptual framing, suggests that understanding the conceptual details of representation can be foundational for work that uses representations to say something about real-world relations to animals. I turn to the history and philosophy of science because of the discipline’s resources for this fundamental conceptual work. After this conceptual analysis of wildlife footage representation takes place, it can support explorations that use wildlife representations to say something about human-animal relations. A preliminary example of this takes place at the end of this chapter, as I explore how scholars have approached the issue of how different perspectives of wildlife afford new possibilities of entanglement.

Describing wildlife films as simulations is counterintuitive. The living organisms that are the subject of such films seem to have little in common with programs run by computer systems to simulate climate patterns, the economy, or theoretical physics. But wildlife films and these more conventional simulations have certain functions in common. For example, Naomi Oreskes’ treatment of geological simulations includes a description of how “a computer simulation can be used to demonstrate circumstances capable of producing known effects” (2007, 113). In this chapter I show how wildlife films demonstrate behaviours and draw from definitions of simulation that emphasize the enacting of behaviour. In addition, the boundary between scientific simulation and living organism are more permeable than we would expect, as illustrated by Hayles’ parallel

narratives of autopoietic perspective in the epistemology of systems biology and of the algorithmic life simulation, *Tierra*. For Hayles, a rejection of the firm distinction between simulation and nature opens up the space to discuss their interactivity. I show that wildlife films represent a variety of targets and that this representation fulfills the characteristics of scientific models and simulations. I begin by offering a taxonomy of the scientific representation that take place within the wildlife footage in the blue-chip renaissance.¹⁴⁶

A Taxonomy of Representations

The following dimensions contribute to the representation of nature in wildlife films. Although they can potentially overlap in the production of the same footage of wildlife, they are distinct enough to warrant separate treatment. In each case, footage of wildlife stands in for another system: the entities being represented (what the philosophical literature calls “targets” or “target systems”) include individual organisms, entire species, or theories of wildlife behaviour.¹⁴⁷ I describe three such functional categories of footage (display, illustration, and demonstration) in order to clarify the representational relations in this footage and make inroads to how they intersect with wildlife films’ educational mandate and knowledge claims.

Display: Footage of Landscapes

The first category I describe is display. Display is footage that does not primarily represent a single organism under narrative description, but rather serves to showcase *landscapes*. Filmed footage of landscapes has long been part of wildlife documentary film, as a way to set the context or to showcase distinctive terrain. As I showed in Chapter 2, within the blue-chip renaissance, technological innovations, high budgets, and the home television market contributed to *Planet*

¹⁴⁶ This taxonomy is descriptive, and by no means exhaustive. There is no pre-determined set of representational categories within wildlife filmmaking; the kinds of representations taking place depend on filmmakers’ and broadcasters’ choices, which collectively make up the genre’s features. As a result, such an analysis can “provid[e] a taxonomy of what is currently available while leaving room for later additions” (Frigg and Nguyen 2016).

¹⁴⁷ These categories are not as self-evident as they seem. Animals in the wild may be substituted for captive or zoo counterparts, as we have seen in the previous chapter. But even filmmakers’ encounters with genuinely wild animals are mediated by the conservation practices that protect habitats from intrusion by local populations, and our preexisting cultural concepts about those animals mean that there can be no truly unmediated encounter with nature. See Chapter 3, in which filmmakers describe how narrative demands motivate the filming plan for a particular species. Birds-of-paradise, for example, are filmed in the anticipation of acquiring footage of rare displays by males. See the making-of documentary for the *Planet Earth* “Jungles” episode for an example of how these expectations influence filmmakers’ practices.

Earth's characteristic overhead footage of landscapes that was striking for its visual crispness and unprecedented stability. This type of footage also appears prominently within subsequent BBC NHU series as well as the suite of Disneynature documentaries; it can include terrain without any identifiable animal life, as well as solitary animals or groupings of animals as in the case of migrating herds.¹⁴⁸ Display footage is not always superimposed by narration, although it often contains stirring music which enhances the footage's potential for affective immersion. Prior to the blue-chip renaissance, many of the IMAX films shown within specialized theatres such as in museums or science centres involved such aerial footage in their immersive documentaries (Griffiths 2008). Much of the footage-as-display within the blue-chip renaissance is that of aerial landscapes, but it also includes landscapes at different scales, including magnification, time-lapse and microcinematography.¹⁴⁹ What all this footage has in common is that it serves as a primarily non-didactic function: it shows nature, rather than tells viewers about it. It essentially offers viewers nature as "an object for visual consumption, to be appreciated by the connoisseur's eye sweeping over an expanse of landscape" (Hayles 1995, 411).

I designate this type of footage as *display* in order to connect it to Beattie's work on documentary display (2008). Reconciling the educational or didactic role of documentary film with its aesthetic or display character has been a challenge within the field of documentary (Cowie 2011). In Ken Burns' acclaimed documentary series *The West* (1996), for example, archival and interview footage is intercut with contemporary footage of panoramic Western skies, cloudscapes, and sunsets. Contemporary reviews were not sure what to make of Burns' inclusion; the skies were beautiful, it was agreed, but how did they contribute to the series' narrative? "The topography here is breathtaking, chunks of its history ugly" wrote one critic of this uneasy juxtaposition (Rosenberg 1996).¹⁵⁰ As I described in Chapter 2, Beattie's concept of documentary display helps film scholars move such affective or atmospheric components of films from the periphery to the centre of analysis. For Beattie (2008) display offers opportunities for sensory pleasures and affective

¹⁴⁸ See Chapter 5 for a discussion of the technological apparatus described in the behind-the-scenes trailer for Disneynature's *Chimpanzee* (2012) to display panoramic views above and within jungle foliage.

¹⁴⁹ For the importance of microcinema techniques for visualizing organism development, see Kelty and Landecker (2004). For time lapse and microcinematography's entry into the suite of techniques of natural history filmmaking, see Scott (2003).

¹⁵⁰ This example is thanks to environmental historian Mark Hinline, personal communication.

knowing. Here, I explore two aspects of the blue-chip renaissance's use of footage-as-display: the genre's mastery of scale, and its intersection with the concept of a pristine landscape.

Footage of landscape contributes to the wildlife films of the blue-chip renaissance demonstrating a mastery of scale. This footage not only displays the astonishing environments visited by the film production teams, but also serves to showcase the films' technological facility over "fast changes in scale [and] ranges of magnification" which Haraway points out is an enjoyable, immersive mainstay of "conventional" nature film footage (2008, 259). The overhead footage in particular was heavily promoted within *Planet Earth's* marketing materials as offering a new experience of nature thanks to this new perspective. Time-lapse and microphotography also contribute to a rhetorical role for footage-as-display; by showing nature as it has never been seen, these films and programs invite viewers into an immersive experience, as well as to deploy a "revered gaze" described by Griffiths (2008). A revered gaze engenders the question "how did they do that?" when facing such feats of visuality.

It is of course impossible to entirely disentangle display's affective features from its educational ones. But in contrast to illustrative and demonstrative footage, footage-as-display lacks didactic narration. The expansive or microscopic landscapes within this type of footage are focused on showing, not telling. Some of the same organisms might be involved in these types of footage, as in when *Planet Earth's* heligimbal camera zoomed out from tracking a particular pair of wolves to showing the horizon-spanning landscape. When watching filmed landscape, viewers are no longer offered spoken facts about wolves or their predation, but are drawn into the stark remoteness of the setting and a palpable sense of the locale's emptiness. There are no caribou within the landscape for the wolves to pursue; the depiction of this emptiness has the potential to affect viewers in a felt way. Alternatively, the series' time-lapse scene of a meadow's changing seasons involves an exuberant display of spring and summer's arrival: foliage appears, buds become flowers, and time is compressed. By manipulating time-scales, static organisms become animate, and wildlife films offer new views of nature (Kelty and Landecker 2004; Scott 2003).

What kind of landscapes are present in footage as display? Within the blue-chip renaissance, they appear to be pristine, devoid of human beings or signs of civilization, and do not show any appreciable boundaries or borders to their non-wild neighbouring spaces. Hayles' discussion of Cronon (1992) and of Richard White (1996) suggests that this expansive, majestic perspective of landscape only became possible once our physical immediacy is no longer

dominated by a working relationship to the land (Hayles 1995, 410-11).¹⁵¹ These landscapes, in other words, show us a particular nature as *the environment*. Within the history of discourses about wild spaces, the environment is a special category in that it is a category *for us* about places that we no longer inhabit. For Neil Evernden, the category of environment “exists because it was made visible by the act of making it separate” and “in a very real sense there can only *be* environment in a society that holds certain assumptions” (1993, 126, 125).¹⁵² Ironically, many of the film locations for blue-chip programming are carefully curated and managed by human beings and conservation organizations, requiring much human effort and activity to appear entirely devoid of the same. These spaces often deliberately exclude local populations from entering or interacting in non-prescribed ways with wildlife; for this reason, they fall within what is known as the exclusionary model of conservation. Not all physical environments maintain the nature-culture barrier in the same way, certainly. Wilson, in particular, describes *landscape* more actively, as an ongoing and reciprocal process that involves both physical and conceptual work: “The way we produce our material culture—our parks and roads and movies—is derived from and in turn shapes our relationships with the physical environment. I call all of this activity landscape” (1991, 13-14). For Wilson, then, the landscapes within the blue-ship renaissance both are the result of and reinforce a nature-culture divide.¹⁵³

¹⁵¹ Landscapes are also connected to Hayles’ treatment of simulation (in the general, non-technical sense) as a “retrospective cultural construction” (1995, 410). Simulation as retrospection fulfills a preservation or eulogizing role, but only emerges when we have obtained a certain distance or temporal separation from that which is being simulated. For example, Aguayo describes wildlife documentary as “conservative nostalgia” thanks to its portrayal of traditional gender roles and family responsibilities, using the 2005 example of *March of the Penguins* (2008). Another example of a nostalgic simulation is Buffalo Bill’s Wild West Show:

By the time it was named such, the “Wild West” had become a retrospective cultural construction that romanticized and mythologized firsthand experience in ways the original participants would no doubt have found amusing, if not incomprehensible. Yet it is the simulation, not the firsthand experience, that often enters popular consciousness as the operative cultural signifier. (Hayles 1995, 410)

¹⁵² Evernden explains further how “the act of becoming discernible is also indicative of a transformation of the human context or background. Nature is no longer a part of that which defines our existence and which reveals the phenomena of daily life; it is transformed from a definer and revealer to a thing defined and revealed. It is set apart to be operated upon at centre stage” (1993, 127).

¹⁵³ Wilson elaborates that “when wilderness areas are built, existing human settlements must be bulldozed, not because they’re too indecorous, but because the boundary between the ‘human’ and the ‘natural’ must be well marked” (1991, 135).

Illustration: footage of wildlife

From footage-as-display I will now turn to the second category of representation at work within the blue-chip renaissance: footage as *illustration*. I use the term “illustration” deliberately for three reasons: it resonates with practices of natural history illustration that I have shown to be a relevant precursor to blue-chip wildlife films in Chapter 2, it connects to Latour’s analysis of immutable mobiles which is relevant in terms of the contemporary acquisition and circulation of wildlife footage within the BBC NHU, its partners, and beyond, and it captures the visual character of this representational relationship.¹⁵⁴

Footage-as-illustration is the most basic dimension of representation in wildlife films. Simply put, footage of a specific organism counts as illustration. Unlike the third category of demonstration, illustration does not require the fulfillment of theoretical categories of behaviour. A typical example of illustration in wildlife filmmaking involves footage of a particular organism, generally overlaid with narration explaining its characteristics. While I discussed the didactic role of narrative in Chapter 2, illustrative footage does not always contain narration. For example, the wildlife film *Microcosmos* (1996) employs microphotography and, apart from its opening and closing narratives describing the film’s silence, no didactic narration in its portrait of the insect denizens of a field. This film employs both illustrative footage of insects and footage-as-display for the enlarged landscape of grasses and soil.

Footage as illustration follows Latour’s concept of immutable mobiles for describing the circulation of scientific images which retain stability within different contexts (1987). Because these inscriptions were both immutable (they did not alter once inscribed) and mobile (they could travel from their source to research communities, which tended to follow a path from periphery-to-centre under colonial models of scientific collection), they offered persistent and portable images such as maps and natural history illustrations. Indeed, Latour employs natural history as an example of how scientific knowledge is produced, through cycles of species accumulation, visual illustration, and classification (1987, 224-25).¹⁵⁵ The extensive, on-location film productions of the blue-chip renaissance also involve the capture of illustrative footage in the vein of immutable mobiles. For Latour, the combinability of immutable mobiles was essential to their

¹⁵⁴ I further connect the concept of immutable mobiles and the legacy of natural history collecting in Chapter 5, drawing on Bleichmar (2011)’s analysis.

¹⁵⁵ Davies interprets Latour’s interest in natural history as evidence of “the importance of the visual in natural history” (1998, 60) which I explore in Chapter 2.

usefulness, and this feature is also applicable to the illustrative footage of wildlife films. Richards has shown that part of the BBC NHU's founding strategy was the collection of discrete and combinable segments of footage that could be re-edited for international distribution, meaning that these segments travel from field locations to the BBC NHU in Bristol's video archive, and then to a variety of broadcast environments (2013a).

Footage as illustration also circulates to video clips on broadcasters' websites or YouTube channels, to promotional trailers, and to viewer communities on social media platforms. At this point they can be transformed into other formats, such as .gif files that isolate a particular burst of activity. For example, one .gif file consists of a few seconds of a bird-of-paradise's mating display. Footage can be further modified by the addition of new sound effects or overlaid narration. These viewer practices, which may be unsanctioned by the copyright holders or broadcasters, turn their transformed footage into *mutable mobiles* which nonetheless disseminate these segments of blue-chip footage into new online spaces and likely constituting part of these programs' cultural impact. For example, for the parody video "Fuck Planet Earth" (2008) comedian Max Goldberg added new narration of actors uttering expletives, as well as shouting "hey," "oh no," or "ouch," over footage of *Planet Earth*, while retaining the original classical music score. The narrative change emphasizes the original series' sober and majestic footage as well as the contribution of conventional narrative to the program's seriousness; these animals' imagined explicit utterances are out of place (Goldberg 2008). A similar example of the parodic effects of modified narration is the "Plizzanet Earth" phenomenon.¹⁵⁶

Illustrations can have rhetorical or promotional power, just as the previous category of display can. If the organism or behaviour in question is rare, difficult to locate, or has never previously been captured on film, the illustration itself can be publicized as a significant filmed achievement. For example, the promotional material for *Planet Earth* (2006) contains a list of

¹⁵⁶ In 2015, the late-night ABC talk show *Jimmy Kimmel Live* featured rapper Snoop Dogg in a segment called "Plizzanet Earth" where the latter narrated clips from *Planet Earth*. Snoop Dogg's excited and sometimes confused play-by-play contrasts strongly with Attenborough's sober narrative style. These clips enjoyed viral success online: "Plizzanet Earth with Snoop Dogg: Otter vs Crocs" has been seen over 3 million times on *YouTube* (Jimmy Kimmel Live 2015). An online petition for Snoop Dogg to narrate the entire *Planet Earth* series reached over 65 thousand signatures. A single episode of *Planet Snoop* was shot for Snoop Dogg's website *Merry Jane*, where the rapper narrated footage (not from *Planet Earth*) of a fight between a squirrel and a snake (Greenwald 2016). Presumably, rights to actual *Planet Earth* footage were more easily obtained for *Jimmy Kimmel Live* by ABC (which is owned by Disney, whose subsidiary DisneyNature enjoys coproduction relationships with the BBC's Natural History Unit). Indeed, the creator of the "Fuck Planet Earth" video writes "It's funny so don't sue me?" in the video's description, underscoring how Goldberg does not hold the rights to the clip's *Planet Earth* footage (Goldberg 2008).

never before seen animals, behaviour, and locations listed as “firsts” in wildlife film history, including the mating displays of birds of paradise, Taiwanese blind cave fish, and fish-herding behaviour by pink river dolphins (BBC Press Office 2006b).

There are some examples from the wildlife film’s history where the footage purporting to be of a particular organism was in fact of a fabricated or artificial specimen. In the early history of expeditionary wildlife films, the specimens were sometimes literally constructed from the body parts of other animals. Mitman describes how the film *Ingagi* (1930) included an animal “so ‘venomous’ that it could not be brought to America,” fabricated from bird wings, an anteater carcass, and a tortoise; the film also contained human actors in disguise (1999, 52).¹⁵⁷ Other cases involved the substitution of one species for another if the species being described was difficult to locate, or the use of tame animals on location to stand in for wild ones.¹⁵⁸ Within the blue-chip renaissance, a repeated tactic by filmmakers is to use captive or zoo animals as stand-ins for their wild counterparts, as I explored within filmmaker interviews in Chapter 3. This practice is especially relevant to the category of illustration, as the animal in captivity implicitly or explicitly stands in for its wild counterpart.

The acceptance of illustrative wildlife footage depends on viewer trust in filmmakers’ and broadcasters’ representations of wildlife which can “authoritatively speak for nature” (Gouyon 2011a, 26). This trust inhabits a historical context within which photography’s (and later, film’s) status as an objective medium for capturing images of reality has been in question. While trust emerged thanks to the camera’s employment as an instrument of scientific investigation of the natural world (Winston 1993, 41-42), the use of early photographic evidence engendered sustained debate over whether photographs’ manipulability meant they were not acceptable bearers of scientific authority (Tucker 2013). For wildlife films, the historical fakery of footage of animal bodies, as well as the undisclosed use of tame animals or enclosures, mean that even illustrative footage can raise questions about the authenticity of wildlife footage. As I showed in Chapter 2, technological innovations that purport to offer a less mediated relationship between camera and animal subject, a touchstone of the blue-chip renaissance, have been deployed in marketing

¹⁵⁷ This film, purporting to show both native women living with gorillas in the Congo and a female sacrifice to a huge gorilla, was condemned by the American Society of Mammalogists and banned by the Hays office on the basis of its nature faking, and not for its nudity or alleged bestiality (Mitman 2009, 51-52).

¹⁵⁸ This took place in the 1930 ethnographic film *The Silent Enemy*, which obtained a herd of reindeer to stand in for caribou whose migration was a pivotal aspect of the Ojibwa culture (Mitman 2009, 47).

materials to bolster the perceived authenticity of wildlife footage. The next category of representation, demonstration, further complicates the relation between footage and authenticity as it positions illustrative footage within particular, narrated scientific categories.

Demonstration: Footage Categorized

Demonstration, the third subset of the blue-chip renaissance's representation of nature, involves footage of behaviour that obliges specific theoretical categories (for example, sexual selection or competition). Wildlife films often employ specific filmed behaviours as demonstrations of species-typical categories of behaviour, accompanied by didactic narration explaining the biological or evolutionary basis of this behaviour. Footage-as-demonstration differs from the prior category of illustrative representations in that the behaviour or characteristics of wildlife are described in terms of theoretical categories using biological or evolutionary categories. For example, in the eighth *Planet Earth* episode, "Jungles," male birds of paradise are described as engaging in courtship rituals. Their colourful plumage and elaborate displays are explained by the narrator to be the result of sexual selection. A female bird of paradise observing one display and subsequently flying away from the male is described as "choosy." David Attenborough, who narrates the British version of the program, explains that "generations of choosy females have driven the evolution of these displays." The male birds of paradise are often featured in wildlife films thanks to their elaborate plumage and spectacular displays, while the females rarely make any appearance other than to inhabit a "choosy" role. This and similar examples from wildlife filmmaking have led to critiques of these films' ideological commitments to traditional, patriarchal human gender roles (Aguayo 2008; Mills 2013; and especially Chris 2006) which echo the critiques of the field of biology more broadly (Roughgarden 2004; Bagemihl 1999; and Haraway 1989 among others).

Christopher Kelty and Hannah Landecker (2004) described how filmed footage can demonstrate theoretical categories within their analysis of the first microcinematography of sea urchin development. They argue that film techniques "not only demonstrate the life of the organism in question, they also animate it in relation to other, often dominant, modes of static representation" that require halting life processes in order to make relevant structures visible (2004, 43). In so doing, the footage not only shows particular cells under development, but

represents scientific categories that, although previously analyzed and understood, had never before been animated:

[biologists] understood themselves to be simultaneously watching a sea urchin, and watching Development, Cell Theory, Life, Movement—all of which had been codified as curves, sections, and diagrams. Theory animates observation [...] a machine is built to animate observation's codification, and the resulting moving image is perceived as an animation of theory. (2004, 38)

For Kelty and Landecker, film footage of sea urchins stands in for theoretical categories for which film made the difference from imperceptibility to perceptibility. This example shows how filmed demonstrations can not only represent their particular subjects, or be tokens for species-typical features, but oblige those theoretical categories.

Filmed demonstrations serve an evidentiary role within wildlife films, as well as in the broader history of documentary film and photography (Mitman and Wilder 2016). The history of the wildlife film genre is replete with efforts to demonstrate specific theoretical categories of animal behaviour as part of the educational mandate of wildlife programming. At times this has been achieved through the use of natural history artifice practices (Mitman 2009). As I discussed in Chapter 3, behaviours desirable to broadcasters or filmmakers are sometimes generated through the use of specific interventions, such as the substitution of tame animals in the place of wild ones or the manipulation of organisms themselves to elicit a particular response. The generated behaviour was at times treated as though it arose spontaneously and was generally narrated as such, or described as species-typical behaviour.¹⁵⁹ This was the case for the Academy Award-winning Disney True-Life Adventure film *White Wilderness* (1958) and its demonstration of lemming suicide (Woodford 2003), which I discussed in Chapter 2.¹⁶⁰ Mitman discusses another

¹⁵⁹ Interventions that risked the well-being of animals in wildlife filmmaking were much more common in the early history of wildlife films, and occur more rarely in modern blue-chip wildlife films, although questions of animal welfare remain salient (see *Cruel Camera* 2008; Palmer 2010). For example, in *The Silent Enemy* (1930), filmmaker William Douglas Burden built an enclosure wherein a bear and a mountain lion “were starved for several days and then provided with a deer carcass” (Mitman 2009, 47) so that the ensuing fight could be filmed. Similar staged fights took place in the 1932 film *Bring ‘Em Back Alive* and allegedly throughout the *Mutual of Omaha’s Wild Kingdom* series (CBC 2008). As in the vast majority of natural history artifice in wildlife films, these cases of staging were not disclosed to the viewers, but were presented as though occurring in the wild without any intervention on the part of the filmmakers. These interventions focused mainly on species-level comparisons, as it was expected that any individuals would be representative of the type of interaction that would ensue. This resonates with the epistemic virtue of truth-to-nature within the history of scientific objectivity (Daston and Galison 2007).

¹⁶⁰ Palmer describes the following interaction in *Shooting in the Wild*:

I once asked Roy Disney, Walt’s nephew, who worked on the series as a young man, if his company was embarrassed by what it had done to animals in the 1940s and 1950s. His answer was “apologies are needed, but the awareness raised by the films far outweighed anything bad that was done during production.” He

example of such a filmmaking practice within the production of Niko Tinbergen's film about Lesser Black-backed Gull communication signaling, *Signals for Survival* (1968). As a gull chick pecks at the red spot on its parent's bill, the narration explains that the red spot is an adaptive signal to encourage feeding. In fact, Tinbergen was unable to find any chicks spontaneously engaging in this pecking behaviour, and had to starve the particular chicks over a few days in order to achieve the footage (Mitman 2009, 83-84). The impression gained from watching the film, however, is that a) the filmed gull chicks pecked their parent's bill spot spontaneously, b) Lesser Black-backed Gull chicks, as a species, peck their parent's bill spots, and c) the red spot on adult gull's bill evolved as an adaptive communication signal, an impression reinforced by the ethological explanation provided by the film's narration. Against an expectation that wildlife documentaries show spontaneous behaviour, the lack of transparency involved in Tinbergen's intervention would make the explicitly-narrated knowledge claims at best incomplete and perhaps even epistemologically suspect.¹⁶¹ But based on filmmakers' descriptions of their practices in Chapter 3, we can more engage more productively with the spot-pecking episode by considering how a demonstration of this behaviour was required for the film's storytelling about evolved signaling mechanisms.¹⁶²

Against this backdrop of the history of a variety of staging practices within wildlife filmmaking, the blue-chip renaissance is distinctive for making prominent the conditions of its production within its peripheral material. The *Planet Earth* series' unprecedentedly high budget and improvements in camera and filming techniques meant that dozens of species and behaviours were caught on film for the first time by teams all around the world (BBC Press Office 2006a;

claims, "We were decades ahead of the ecology movement. I can't tell you how many times I've run into park rangers who told me they found their careers after growing up on *True-Life Adventures*." (2010, 39)

The explicit conservation goals and transparency efforts of the *Disney Nature* subsidiary can be interpreted as an attempt both to highlight the earlier conservation ideals of Disney as well as to rehabilitate the corporation from such staging episodes in its wildlife filmmaking history. The influence of Disney on the wildlife genre ought not be understated. Bousé (2000) argues that Disney's *True-Life Adventures* were the progenitors of the blue-chip format, while Wilson (1991) suggests that the films' anthropomorphism was instrumental for ecology's current understanding of nature's interrelatedness.

¹⁶¹ Viewers' assumptions are, of course, difficult to ascertain with certainty. In addition, the effects of transparency (or lack thereof) on viewers is a difficult topic given the lack of targeted audience studies. Cronon's foreword to Mitman (2009) asks whether staging practices "violate an implicit contract with the audience" (xiii). For wildlife filmmaking as knowledge production, see Gouyon (2011a; 2011b; 2016).

¹⁶² In addition, Latour's research from *The Pasteurization of France* (1988) about the social forces involved for demonstrations to convincingly demonstrate anything is a relevant reminder that there are no self-evident criteria for demonstration.

2006b). The care taken by film producers to promote the ways certain shots were achieved and the technological improvements of the blue-chip renaissance is a key rhetorical move in constructing these demonstrations as an unmediated view of wildlife, and of the authenticity its footage, which I explore further in Chapter 5. Another analytical inroad to footage-as-demonstration is to look at documentary film's treatment of reenactment, which I describe later in this chapter.

We have seen, then, how footage of wildlife in the blue-chip renaissance represents nature through the display, illustration, and demonstration of target systems. The latter can be a variety of real or theoretical entities, including the specific organisms in profilmic space, species, or theories of wildlife behaviour. For example, footage of a polar bear mother and cubs, stars of the 2009 Disneynature film *Earth*, simultaneously represent the actual trio of polar bears living in a Scandinavian wildlife preserve, as well as polar bears as a species and theories about the adaptive value of mammal parenting strategies. These categories have helped disentangle our analysis of how different footage stands in for various entities, and they offer an inroad to approach implicit or explicit knowledge claims about wildlife. I now move from describing how this footage represents such targets to exploring how these categories of footage intersect with specific representational practices and aims of scientific models and simulations, allowing me to argue that wildlife films are models, and more specifically, simulations of nature.

Wildlife Films as Models and Simulations

Before making the case that wildlife films are models or simulations of various scientific categories, I will deal with two potential and related objections. It may be supposed that wildlife films' representation falls under the broader banner of pictorial representation, and need not be considered a case of scientific representation at all. After all, wildlife film footage depicts elements from profilmic space, such as animals, plants, or terrain, as projected images. This depiction could be interpreted as a more straightforward resemblance relation or even an indexical one, where the image of an animal depicts that animal. The second objection is that wildlife films are not scientific enough to count as models, which would require scientific sources, or users, or uses, or lead to the development of new scientific knowledge. A shared consequence of either of these objections would be that wildlife film footage would not qualify as a scientific model, thanks to it not satisfying the "scientific" criterion of representation.

To these objections I offer two replies. First of all, there is a great deal of overlap in the treatment of scientific and pictorial representations within the philosophical literature, including skepticism that there are any fundamental differences in their representation relations. As a result, it becomes difficult to maintain any categorical difference between them (Frigg and Nguyen 2016).¹⁶³ Secondly, and relatedly, it turns out to be impossible to draw a firm boundary around models that are scientific and those that are not; in other words, there is no solution to a scientific demarcation challenge for models. This is motivated in part by examinations of model creators'—and users'—intentions and practices: Phaidra Daipha's ethnography of weather forecasting, for example, offers a portrait of weather maps generated by meteorology's most sophisticated data models that are nonetheless meant for public consumption and involve the creation of local meanings rather than purely scientific knowledge (2015). Weather maps are similarly used as an example of a scientific model by John Kulvicki (2010). Ronald Giere offers to resolve scientific representation in the following 4-component definition: "Agents (1) intend; (2) to use model, M; (3) to represent a part of the world, W; (4) for some purpose, P" injecting the literature on scientific representation with a focus on agents' intentions and purposes and moving away from any necessity for pure, inherent scientific content within the model itself (2010, 269).¹⁶⁴ Thus, in a case where the producers of a wildlife film intend to educate viewers on scientific topics (among other intentions, such as commercial viability) or for whom the purpose of filmmaking is to demonstrate biological findings or who are themselves scientists, we can be confident in describing their film as a scientific representation. For these reasons, wildlife films ought to join other public-facing scientific representations of nature, such as preserved animal bodies and dioramas.

Wildlife Footage as Modelling

There are multiple ways in which footage of behaviour within wildlife films models target systems. In the same way that model organisms represent a standardized ideal of their own species

¹⁶³ Frigg and Nguyen (2016) draw from Callander and Cohen (2006)'s argument for there being only a circumstantial distinction between scientific and pictorial representation. They also point to examples of work which focuses on parallels between the two types, including Hughes (1997), French (2003), Suárez (2004), Frigg (2006), van Fraassen (2008), and Elgin (2010); for Frigg and Nguyen, this suggests a consensus that there is no fundamental difference between scientific and pictorial representation (2016). A potential solution for Frigg and Nguyen is Contessa (2007)'s assertion that instead of prioritizing the demarcation between scientific and non-scientific representations, the relevant demarcation is between epistemic and non-epistemic representations.

¹⁶⁴ In addition, Gouyon points to a trend within the history of science and STS where this research has departed from segregating the scientific, educational, or commercial goals of hybrid scientific products (2014).

(Clause 1993; Kohler 1993; Bolker 1995; Rader 2003), the images of organisms in wildlife films are described as though they are representative of their species.¹⁶⁵ Even the narration accompanying specific filmed behaviours of one organism refer often to species-typical behaviour: you are as likely to hear “the polar bear...” as you are to hear “polar bears...” over footage of a single bear. In particular, footage-as-illustration and footage-as-demonstration aims to show features or behaviour that are characteristic of the entire species. As in Daston and Galison’s category of truth-to-nature (2007), these types of wildlife film footage show species-typical features or behaviour; the idiosyncrasies of particular filmed organisms are generally less important than the generalizability of those features. The effectiveness of wildlife films’ educational function depends upon these standing-in relations: these programs are meant to visualize and teach about nature, and not the specific examples that happen to be in front of the camera.

Idealization is perhaps the most important characteristic of models for philosophers of science. Idealization is the “deliberate simplification of something complicated with the objective of making it more tractable” (Frigg and Hartmann 2017). The concept of idealization has been further broken down into two types, originally distinguished by Ernan McMullin (1985): Aristotelian idealization, also known as abstraction, and Galilean idealization, which is often referred to as simply “idealization.”¹⁶⁶ Galilean idealization refers to the misrepresentation or modification of certain features of the model, while abstraction refers to the omission of extraneous details from the model. Martin Jones states that “we might say that when, in the various sciences, we theorize about a certain class of systems, we habitually lie about some aspects of the systems in question [idealization], and entirely neglect to mention others [abstraction]” (2005, 174). Target systems can be messy, and by employing the practices of idealization and abstraction, models become simpler for scientists. For example, model organisms are often less complex than their target systems, leading to their greater tractability for researchers and their ease of use in pedagogy (Rosenbluth and Wiener 1945; Bolker 1995, Rowan 1981). In this way, model organisms stand in for their more complex counterparts (Ankeny 2009; Leonelli 2010).

¹⁶⁵ As well as to be analogous to another target species (Rader 2003; Ankeny 2007), which in biomedical research is nearly always human beings (although at times a model organism can serve to represent a broader category, such as all vertebrates).

¹⁶⁶ McMullin (1985) based this distinction on the historical practices of Aristotle and Galileo.

The footage within wildlife films is the result of processes of idealization and abstraction as well. Many types of behaviour are simplified in the narration or distilled to what are considered to be their most essential features. Idealization within wildlife filmmaking includes an emphasis on particular categories of behaviour. For example, birds of paradise are nearly always shown inhabiting their “choosy” and “chosen” roles, and no other roles. The male birds’ plumage and their striking mating displays are emphasized far more often than more mundane behaviours like foraging or sleeping, leading to a distortion of the frequency of those behaviours within wildlife films. Abstraction takes place through leaving out certain animal behaviours completely (especially those that would complicate a simple narrative of theoretically-consistent behaviour, or those considered offensive to viewers’ sensibilities).¹⁶⁷ I am not attempting to describe these footage-selection practices as the result of commercial pressures (although these have been well-described elsewhere; see Bousé 1998); rather, I am interested in the ways in which the scientific representation within models *also* involves choices about simplification and exclusion. Taking these choices seriously allows for a more complex understanding of the co-constitution of entertainment and education at work within wildlife films. For example, Nancy Cartwright (1983) has argued that models need not be true to be good for understanding their targets, and Roman Frigg and Stephan Hartmann (2017) describe a more complicated relationship between learning and representation within models than one of accuracy or verisimilitude.

The case of time compression is especially relevant in showing how wildlife films model nature. For Bousé, time compression is an editing practice within wildlife film that distorts the genuine experience of nature and makes wildlife film footage of organisms different from the experience of a less-active, direct encounter with that same organism (1998; 2000).¹⁶⁸ Bousé’s interpretation is that time compression is a response to the commercial pressure for exciting footage, and contributes to wildlife films’ disqualification from documentary proper. However, thinking about wildlife films as models allows a different interpretation. Time compression is an idealization practice employed to construct a particular model of the target of this representation. For example, Mitman has described how the rise of ethological filmmaking and the discipline of ethology’s focus on discrete and self-contained movements interpreted as instinctive behaviours,

¹⁶⁷ Animals are almost never seen defecating in a blue-chip wildlife film, for example, or engaging in non-reproductive sexual activity. The latter has clear ideological motivations, according to Chris (2006, chap. 4).

¹⁶⁸ See Ivakhiv’s critique of Bousé’s (2000) position as a reflection of cultural assumptions about nature (2013, 206).

increased the wildlife genre's portrayal of animal activity and resulted in views of a more active and exciting nature (2009, chap. 3).¹⁶⁹ In addition, Kelty and Landecker have described how time compression was employed in the first scientific microcinematic visualization of sea urchin development. The images were edited and projected at a certain speed in order for the process of development to take place within two minutes (2004, 36). As a result, sea urchin development was animated for the first time, but the visualization of the entire process was compressed to a two-minute window; in other words, biologists produced an idealized representation to make development visible. Following these examples, it becomes possible to interpret time compression as a legitimate technique of scientific representation and not as an external constraint on accuracy.

Considering wildlife films as models allows new insights into filmmakers' selection practices. Not only do filmmakers need to plan and selectively edit their footage in service to storytelling, as I show in Chapter 3, but this selection also constitutes practices of idealization and abstraction that result in a focus on essential characteristics and the exclusion of ones considered less relevant within scientific representation. This exclusion is relevant to the truth-to-nature concerns I describe in Chapter 2, where expertise allows the distortion or exclusion of a token example of a species in order to preserve what is true and essential about that species. In addition, treating selection practices in this way is a further breakdown of the barrier between the entertainment and educational aspects of wildlife film identity. These realizations also reinforce wildlife films as a target of feminist critique of these practices within science. The inclusion of gender-essentialized animal footage and the exclusion of non-heteronormative behaviour in animals is not only the result of filmmakers wanting to tell particular stories. It also reflects scientific assumptions about sex and gender (Chris 2006), ones which are increasingly critiqued as selecting from a limited set of the full sexual expression found in nature (see Barash and Lipton 2002; Bagemihl 1999; Reichard and Boesch 2003; Møller 2003; Low 2003; and Roughgarden 2004).¹⁷⁰ Having explored how wildlife film footage models its targets, I will once again zoom in towards greater descriptive precision and argue that wildlife films not only model, but simulate nature.

¹⁶⁹ Mitman describes how "In utilizing film to dissect and analyze animal movement to gain a precise understanding of visual communication in the animal world, ethologists zoomed in not on the mundane, but on the dramatic" (2009, 83).

¹⁷⁰ I elaborate this connection to wildlife films in the *Cultural Readings of Animals* section of the Conclusion.

Wildlife Footage as Simulation

For philosophers of science, describing the differences between simulations and experiments is important for the kinds of epistemological ramifications they offer. One such standard difference between experiments and simulations rests on assumptions about experiments' intervention and simulations' representation. For example, Wendy Parker describes an experiment as “an investigative activity that involves intervening on a system in order to see how properties of interest of the system change, if at all, in light of that intervention” (2009, 487). Simulation, on the other hand, has been described by philosophers of science as some kind of representative process (Krohs 2008). A simulation is “a time-ordered sequence of states that serves as a representation of some other time-ordered sequence of states” (Parker 2009, 486), one which “allows scientists to imitate one process by another process” (Hartmann 1996, 77). It is a type of representation that reflects the target system's temporality in that it “accurately captures the time evolution of the target system” (Frigg and Reiss 2009, 596). It has also been described more generally as “any system that is believed, or hoped, to have dynamical behavior that is similar enough to some other system such that the former can be studied to learn about the latter” (Winsberg 2015).¹⁷¹

The above definitions and descriptions emphasize simulation as dynamic.¹⁷² But heeding dynamism alone overlooks a key feature of simulations, according to Isaac Record: their imitation or representation takes place through the *enacting of behaviours* meant to be analogous to those of the target system over the duration of the simulation. Thus, he defines simulation as “any investigative activity that involves one system acting out behavi[our]s of interest of another system

¹⁷¹ Winsberg (2015) employs this definition for a more general sense of simulation than that of computer simulation, which is the narrower category that has been of greatest interest to philosophers of science. He also describes how simulations can have primarily heuristic purposes, including “those used to communicate knowledge to others, and those used to represent information to ourselves.” When considering wildlife films as simulations, they would fit well in the former category, as they represent animal behaviour for public education and entertainment. However, the production of wildlife films has also been described as knowledge production; see Gouyon (2011b; 2016).

¹⁷² Record (2012) rejects the intervention/representation distinction between experiments and simulations:

Simulations are supposed to tell us about some aspect of the world by representing it, while experiments are supposed to tell us about some aspect of the world by intervening on it. But representing and intervening, whether constitutive of the respective practices or not, do not serve to distinguish the two. Simulations involve interventions and experiments involve representations, at least some of the time. (2012, 96)

Winsberg (2015) agrees with this assessment, in his claim that “It is false that real experiments always manipulate exactly their targets of interest. In fact, in both real experiments and simulations, there is a complex relationship between what is manipulated in the investigation on the one hand, and the real-world systems that are the targets of the investigation on the other” (2015).

and representing them to the investigator” (2012, 97). This definition of simulation pertains to an inquiry about wildlife films: their demonstrative footage of behaviour represents a variety of target systems, from the organism itself, to its species, to biological theories.

Record’s definition is also what makes simulation, and not only modelling, a more precise characterization of the representation taking place in wildlife films. For although it would certainly be accurate to describe the relationships where the images of animals stand in for those of real wildlife or of theories about wildlife as modelling relationships, it would not be sufficient to tease out what is distinctive about wildlife filmmaking from other types of representation. After all, such modelling could take place in a variety of media, including photographs or diagrams of wildlife, textbooks describing how particular organisms’ behaviour is an example of biological theories, or an audiobook containing the narration from a wildlife documentary.¹⁷³ The feature distinguishing a wildlife film from any of these genres is that in a wildlife film, the viewer experiences footage of wildlife behaviour; within the blue-chip renaissance, such an experience includes the three categories of footage I described earlier in this chapter. That behaviour is a simulation acting out the behaviour of other systems. In line with the tropes of the wildlife film genre, footage of wildlife not only stands in for firsthand experience of that wildlife itself but offers viewers a simulation of the species as a whole, as well as a carefully-edited presentation of footage of the material instantiation of biological theories of animal behaviour, of evolutionary adaptation, or of sociobiology.¹⁷⁴ Although static representations can model living organisms, for example, as specimens within museum dioramas, the active behaviour shown within wildlife films requires that we conceptualize the process as also one of simulation. This requirement would also be true of model organisms, whose temporal dynamics (especially their rapid rates of growth) determine their usefulness for researchers (Bolker 1995). Characterizing wildlife films as simulations allows further productive inquiry into two applicable phenomena related to intractable animals: confoundment and reenactment.

¹⁷³ See Morgan’s Afterword to *Science without Laws: Model Systems, Cases, Exemplary Narratives* for an account of the wiring diagram of a worm’s nervous system from Ankeny’s “Wormy Logic: Model Organisms as Case-Based Reasoning” as “a rendering into another medium of one abstracted element of its life” (Morgan 2007, 271; Ankeny 2007).

¹⁷⁴ See especially Chris’ *Watching Wildlife* (2006) for the sociobiological narratives of wildlife films.

Confoundment and Intractable Animals

The major challenge of wildlife filmmaking is the unpredictability of wild animals. Filmmakers are unable to depend on animals performing specific behaviours reliably while cameras are rolling on location; Ivakhiv has described this recalcitrance as “one of the clearest ways in which ‘reality’ intervenes in the making of a [wildlife] film” (Ivakhiv 2013, 200).¹⁷⁵ This challenge connects wildlife films to another key issue for philosophers of science interested in simulation: confounding.¹⁷⁶ Mary S. Morgan (2003; 2005) has specified that novel or unexpected results belong to two distinct types: surprise and confoundment, where only the latter involves the emergence of unanticipated patterns. A surprising result falls within the parameters of the simulation but had not yet been encountered empirically. On the other hand, confounding results are not specified in advance by these parameters and therefore enjoy a “degree of freedom afforded to the system under study that allows it to exert an influence on the investigation” (Lusk 2015). Confounding occurs when the material underpinnings of the target system behave in ways not predictable by theoretical parameters within the simulation. In general, for Morgan, simulations are pre-specified by their programmed parameters, and can only confound when the inputs are semi-material: they enjoy a degree of freedom such that results are not specified by the simulation itself. Morgan describes such a case as “virtually experiment” (2003, 225).¹⁷⁷

The inclusion of “never before seen” behaviours in wildlife films, including behaviour not having been identified or predicted within the broader literature of the biological sciences, would qualify as confounding if the results obtained by the simulation not only had never been seen before (making them novel) but also could not have been theoretically anticipated prior to their performance.¹⁷⁸ Confoundment would seem to also apply in cases where animals failed to behave in ways predicted by theory, in addition to those where animals behave in new ways not yet described theoretically. In Mitman’s (2009) example of Tinbergen and the uncooperative gull chicks, their refusal to peck at the red spots would be confounding to filmmakers for whom the

¹⁷⁵ See Chapter 3 for filmmakers’ attitudes towards this significant professional challenge.

¹⁷⁶ For a recent review of simulation and novel empirical evidence, see Lusk (2015, chap. 1).

¹⁷⁷ Morgan’s specific example is of a 3D digital model of cow bones produced through thin slicing, scanning, and computer rendering of a structural model based on real cow bones. If there are things the simulated cow bones do not “know” about the genuine bones’ structure, the simulation can confound. Because the bones’ material properties may not be entirely captured by the simulation’s parameters, that degree of freedom means the semi-material input can lead to a confounding simulation (Morgan 2003, 221-224; Lusk 2015).

¹⁷⁸ The role of this category of footage in the publicity and marketing of wildlife films will be described in Chapter 5.

parameters of ethological theory would predict reliable spot-pecking. In both of the senses specified above, confoundment is a useful concept for describing the ways in which the intractability of nature can surpass filmmakers' ability to predict or control specific theoretically-anticipated behaviour in the production of footage-as-demonstration.¹⁷⁹

Simulation as Reenactment

While I discussed the phenomenon of staging in more detail in Chapter 3, at this juncture it is worth turning to documentary film studies to help classify the simulation going on within cases of purposefully staged illustrations or demonstrations of animal behaviour. Although there is no agreed-upon definition of staging, there are cases in the history of wildlife film where the footage shows animals or behaviours as though they were spontaneously located in the wild, where they were instead generated by the filmmaker's actions or filmed in captivity. These include examples of both footage-as-illustration and footage-as-demonstration. The fabricated bird-turtle-armadillo specimen described by Mitman (2009) and the more-common substitution of zoo animals for their wild counterparts are *illustrations* of wildlife that did not occur in the wild. Footage that scientifically describes behaviour, like the spitting cobra from the BBC NHU's *Life in Cold Blood* (BBC 2008) and the gull chick's bill-pecking activity from Tinbergen's *Signals for Survival* (1968), are *demonstrations* that occurred in conjunction with filmmakers' interventionist practices. We can productively consider these examples to be cases of *reenactment*, drawing from resources within documentary film studies.¹⁸⁰

Reenactment involves the recreation of events within a documentary film. Scenes not witnessed by the film crew or historical events can be recreated with human actors or documentary subjects following a particular script. Some scholars have considered reenactment to not be permissible within documentary proper, or encounter at least some forms of reenactment as a violation of the documentarian's responsibility to actuality (Winston 1999; 2000; Nichols 1991; 2008).¹⁸¹ Criticism of such examples of wildlife film staging follows this pattern. Others, however,

¹⁷⁹ This can be a particularly relevant professional issue. Films can be pitched to broadcasters or funders specifying the inclusion of certain animals or sequences that turn out to be difficult or impossible to obtain. See Chapter 3 for working filmmakers' experiences of this issue.

¹⁸⁰ This linkage was inspired by correspondence with animal film scholar Erin Wiegand, personal communication.

¹⁸¹ Jasen describes this tension in the following way:

reenactment in cinema blurs the boundaries between the categories of documentary and fiction, which has often provoked discomfort and anxiety. From reenactments in early cinema to documentaries and

see reenactment as one practice among many that documentary filmmakers employ to portray an event to audiences that could not have occurred otherwise, undermining considerations that reenactment violates the authenticity of a documentary (Godmilow and Shapiro 1997; Kahana 2009). Sylvie Jasen considers reenactment by documentary subjects who are non-professional actors: amateurs who reenact their own experiences disrupt the boundary between documentary and fiction film and motivates considering reenactment not as a situation involving an original event and its copy but rather of reenactment as a bodily and evocative performance (2011). Similarly, Kahana focuses on the dual meanings of reenactment's root word "enact" (to do and to perform) for documentary. Jasen and Kahana's considerations of reenactments as performances move us beyond clear-cut judgements of authenticity versus artifice; in this context, wildlife footage-as-illustration and footage-as-demonstration can productively be analyzed.

Because simulations are one system enacting the behaviour of another, reenactment follows as an iteration of the same process. Although not generated spontaneously, the gull chick spot-pecking example from Tinbergen's *Signals for Survival* (1968) involves the representation of theories of ethological signaling, it does not have to be disqualified from the category of simulation on the grounds that the spot-pecking was a reenactment of behaviour that does spontaneously occur. Whether spot-pecking does occur in the wild is an empirical question of interest to biologists, one that is different from whether it is appropriate to reenact this behaviour within a filmed simulation. The filming of captive animals within a zoo environment can also be considered a reenactment of behaviour that would be expected to occur in the wild. The benefit of drawing from treatments of reenactment within documentary film studies is that it helps to dissolve any fixed boundary between authenticity and artifice for wildlife films, which brings them in-line with treatments of other scientific models that trouble questions of truth and falsity of a model (e.g. Cartwright 1983). As both reenactment and confoundment are related to the knowledge claims of wildlife films, I now turn to the question of whether these films generate knowledge, the way models and simulations are generally considered to do.

docudramas, hybrid films have been charged with intentionally deceiving audiences, with confusing fact with fiction, with attempting to disguise fiction as fact, or with distorting history. Although examples of deliberate deception by filmmakers using reenactment are rare, reenactment's status as a performance exists in a tension with its potential function as a record or a document. (2011, 16)

Do Wildlife Films Generate Knowledge?

One question surrounding the treatment of wildlife films as models and simulations involves whether they are knowledge-generative; in other words, does interacting with the model generate new knowledge that was not possible from studying the target system on its own? Although there is some debate over whether simulations can generate new knowledge (Morgan 2003; Galison 1997), the question remains relevant. For the most part, wildlife film footage models its target systems for educational and popularization functions. These films are public-facing, and are designed to teach viewers about their wildlife subjects. This educational identity constitutes their public broadcasting mandate (Richards 2013a).

Having this public face does not preclude wildlife films from the category of modelling or simulation; on the contrary, education and popularization are key components of other historical scientific models. Indeed, Soraya de Chadarevian and Nick Hopwood emphasize that the characterization of models as only of interest for teaching or popularization misunderstands how models played key roles throughout research, pedagogy, and public settings of interest to historians of science: “the movements of models also exemplify the impossibility of separating those activities from research [...] models used for teaching were often the same as those that guided research; models started as research tools and became teaching aids, but also vice versa” (2004, 3). This movement informs their claim that models’ role is that of “a key medium of traffic between the sciences and the wider culture” (de Chadarevian and Hopwood 2004, 6) and undermines any firm boundary between knowledge-generating models and public-facing or educational models. On the whole, scholars in the history of science focus less on erecting barriers between the knowledge-production and public functions of models and images and more on how these functions virtuously interact (Hüppauf and Weingart 2008; Borck 2012).¹⁸² Indeed, Sybilla Nikolow and Lars Bluma argue that we should focus not on a distinction between visualizations and popularizations of science and instead work towards “the erosion of boundaries between expert communities and the general public, between the scientifically ‘objective’ and the ‘popular’” (2008, 22). Equally relevant are explorations of the essentially narrative character of science, as in Gillian Beers’ *Darwin’s Plots* (1983) and Greg Myers’ *Writing Biology*, in which he describes

¹⁸² Referring to the history of models of the brain in neuroscience, Borck characterizes this as “a dynamic exchange between models, metaphors, and research strategies for accommodating and generating new masses of data” not only within neuroscience but for the changing “neuroculture” of society (2012, 114, 129).

how “Science is like other discourses in relying on rhetoric; it just uses a different kind of rhetoric” (1990, 4). A result of these accounts is the realization that while models used in research generate new knowledge for their users, segregating research from other functions misunderstands the historical permeability of those boundaries. Models used in public settings need not be disqualified from knowledge-generating possibilities.

There are interesting cases where new knowledge about wildlife has been generated thanks to particular wildlife films. Gouyon has described how the production techniques for the film *Winged Migration* (2001) led to new insights into the energy expenditure of flight formations and the creation of a research paper by one of the production’s scientific advisors (2016, 91).¹⁸³ There are also cases where footage for blue-chip wildlife productions has served as the first filmed evidence of a behaviour occurring in the wild. Examples include unrelated whales’ collaborative bubble-feeding in National Geographic’s *CritterCam*, *Planet Earth*’s capture of pink river dolphins’ fish-herding behaviour, or the adoption of an orphaned chimpanzee by a male adult in DisneyNature’s *Chimpanzee* (Haraway 2008, 259; BBC Press Office 2006b; von Leszczynski 2013). Gouyon’s work on the history of the BBC’s NHU has focused on how natural history filmmaking positioned itself as a site of knowledge production, including how filmmakers professionalized and transformed their interventions to make wildlife visible in novel ways into a set of legitimated knowledge practices (2011a; 2011b; 2016).

Liveliness in Filmed Nature: Alternatives to the Blue-Chip Genre

My argument that blue-chip wildlife films model and simulate nature is descriptive; the modelling literature is not aiming to specify ahead of time which styles of model are ideal but offer a descriptive taxonomy of the styles that exist (Frigg and Nguyen 2016). As a result, this work follows from the real-world modelling taking place and does not prescribe model styles independent from those that already exist. I am trying to describe the ways that footage in these programs models and simulates its targets. Certain research into wildlife films argues that different formats to blue-chip are superior, or offer better conservation impacts, or better demonstrate the entanglement between human and animal being. It is certainly true that alternatives to the blue-

¹⁸³ This research was mentioned in a later BBC series, *Life* (2009). Gouyon describes how this inclusion was “a nice case of knowledge obtained during the shooting of a natural history film being then communicated through another nature film” (2016, 100 fn 33).

chip wildlife film format exist, and have been discussed in the extant wildlife film literature (see especially Mitman 2009; Wilson 1991). In this section I will consider two such alternatives: static cameras (including both trail cams and webcams) and crittercams. By limiting my focus on two genres that showcase animals in their habitats and leave out human presenters, I hope to more precisely demarcate the representational effects of the blue-chip style and to show how, in Evernden's words, "Any change of instrument, of mechanical appendages, brings with it some alteration of stance as well" (1993, 95). What stance towards wildlife do blue-chip wildlife films engender?

Candid Camera: Static Wildlife Feeds

Millions of people watch images and footage of animals over the internet through feeds from uploaded webcams and trail/game cameras (Chase 2011). These are static cameras or videocameras that continuously broadcast footage or still images of zoo enclosures, nest sites, animal shelters, national parks, or game trails. Auto-uploading images viewable on computers have a history predating the Internet. A feed of images of a coffeepot at Cambridge University was the first documented use of such networked visual monitoring and inspired the eventual later development of webcams (Stafford-Fraser 1995).¹⁸⁴ These camera feeds offer viewers the chance to witness animal movement, depending on whether any animals happen to be present while the feed is being watched. Viewers of these camera feeds obtain the satisfaction of seeing a fleeting glimpse of a passing animal, or of experiencing the anticipation of long-awaited activity such as the laying or hatching of eggs. The owners of trail cameras even send their captured animal images or footage to state wildlife agencies, such as the Vermont Fish & Wildlife Department, to help with species identification or for bragging rights for having captured a glimpse of a rare animal; according to spokesman Tom Rogers, "[t]he cameras have definitely proliferated [...] They've become a neat way for people to interact with wildlife" (Davis 2015).¹⁸⁵ During the 2013 government shutdown, one of the "most beloved casualties" was the panda cam at the

¹⁸⁴ The first and most famous of these was the system that took a picture of the coffeepot outside of the Trojan computer lab at Cambridge, three times a minute. The images were available to the building's researchers over their local computer network; as a result, they no longer had to travel to the coffeepot to see if there was any fresh coffee. The feed was a popular destination of the early World Wide Web (Stafford-Fraser 1995).

¹⁸⁵ Vermonters have sent purported catamount sightings, which experts mainly identify as bobcats, and one alleged sighting of Bigfoot, which was likely close-up footage of an owl (Davis 2015).

Smithsonian's National Zoo, which was considered "non-essential" programming (Wallace 2013).¹⁸⁶

Another prominent example of the popularity of animal cameras feeds is the Deborah eagle cam feed. Run by the research conservation initiative Raptor Resource Project, the feed began broadcasting footage of a bald eagle nest in Decorah, Iowa in 2007. Between February and April, the feed grew in popularity as the eagle parents incubated the eggs. Footage from this camera was used in the PBS *Nature* wildlife documentary "American Eagle" (2008). The feed reached unprecedented popularity in 2011: "Millions of viewers watched in early April as each of the chicks hatched over the course of five days" (Chase 2011) and the feed often had over 100 thousand viewers at a time, surpassing the bandwidth of website host Luther College (Thalacker 2011, Grossman 2011). The feed was accessed from 184 countries in 2011; an article mirroring the live feed was the most popular post on Wired magazine's website for that year, with the high traffic crashing their website several times (St. John 2012; Hernandez 2012). The feed continued to grow in popularity the following year to become "the most popular live streaming video ever" (St. John 2012) and remains the "most viewed live video of all time" (Ustream 2018).¹⁸⁷

Journalists covering the phenomenon made comparisons between the simplicity of the eagle cam footage and more conventional documentaries. *Forbes'* Allen St. John described the eagle cam as a "no-frills nature video":

The video is decidedly bare-bones: imagine a nannycam aimed at a pair of bald eagles in their giant nest near Elkader, Iowa. It can be accessed 24/7, but there's no Morgan Freeman narration, no super-slo mo. The birds don't even have names; in keeping with the spirit of research the two birds are called simply D1 and D2. While it may seem a little dry even by the standards of the National Geographic Channel, a whole lot of viewers have found something truly compelling about watching these birds go about their business. (St. John 2012).

Trail or nest cams do not offer the same representational concerns as do blue-chip wildlife footage, which has been accused of over-emphasizing exciting moments and giving viewers a

¹⁸⁶ The National Zoo's popular pandas Tian Tian, Mei Xiang, and Bei Bei, who can be watched on the two cameras of the Giant Panda Cam online feed (<https://nationalzoo.si.edu/webcams/panda-cam>), belong to a series of zoo animals who experienced massive online popularity. Knut, a polar bear cub who lived at the Berlin Zoo from 2006 until his death in 2011, became an international sensation with a strong online presence and has been credited with reinvigorating a public interest in climate change (Flinterud 2013). More recently, the Cincinnati Zoo's Fiona the hippo, born prematurely, has been a social media sensation with 77 thousand subscribers to "The Fiona Show" YouTube playlist (Cincinnati Zoo & Botanical Garden 2017).

¹⁸⁷ When I accessed the eagle cam on February 19th, 2018, I joined 546 people in watching an empty nest. The feed has been viewed nearly 354 million times to date (Ustream 2018).

disproportionately active view of nature (Palmer 2010, Bousé 1998). The excitement of blue-chip footage does not occur with the same frequency, but patience is eventually rewarded as long-awaited animals are born or an exciting trail encounter is caught on camera. On the other hand, this feature is a liability if viewers are accustomed to the more rapid pace of wildlife films; as a result, recaps are often available to show exciting moments, which mirrors blue-chip films' curation of footage into a compelling story. But fans of nest cams describe the pleasure in anticipating these moments, or the relaxation potential of peaceful feeds (Mohan 2015).¹⁸⁸ Static cameras offer a tantalizing promise of liveliness that is all the more valued for its rarity.

Lively Animal's-Eye Views: Crittercams

A more active and visceral example of an alternative to blue-chip wildlife film is the CritterCam. Crittercam shows involve an “animal cameraman” where the camera is attached to different animal bodies in order to provide a distinctive animals'-eye-view and to enter places inaccessible to a human camera operator, such as small dens.¹⁸⁹ In wildlife series such as National Geographic's *Crittercam* (2004) or the *Animals with Cameras* (2018) miniseries on PBS' *Nature*, a variety of animals are employed to film their surroundings. Promotion for these series, as Haraway noted in *Where Species Meet*, emphasize the novelty of the critter's-eye-view footage as well as viewers' and scientists' access to new knowledge that would not have been possible without the crittercam assemblage (2008, 259). Haraway's assessment, however, is that the crittercam footage often does not live up to its hype by broadcasters:

Actual Crittercam footage is, in fact, usually pretty boring and hard to interpret [...] Cameras might be askew on the head of the critter or pointed down, so that we see lots of muck and lots of water, along with bits of other organisms that make precious little sense without a lot of other visual and narrative work. Or the videocams might be positioned just fine, but nothing much happens during most of the sampling time. Viewer excitement over Crittercam imagery is a highly produced effect. Home movies might be the right analogy after all. (2008, 258)

Considering critter cam footage to be “pretty boring and hard to interpret” drives home the role of narrative and story in crafting interest within blue-chip wildlife programs, which are more exciting

¹⁸⁸ Indeed, articles about animal cam feeds consistently refer to their potential to encourage relaxation or to act as a distraction from more stress-inducing activities.

¹⁸⁹ As I described in Chapter 3, this challenge for human camera operators was used as a justification for *Frozen Planet's* (2011) construction of a polar bear den enclosure (Watson 2011).

by comparison.¹⁹⁰ As a result, crittercam programs must promote how the crittercam footage was achieved, which implies that elements of Griffiths' analysis of the "revered gaze" is relevant. Viewers are given a story of how the camera was attached to the animal and how the footage offers an entry into unseen animal worlds, including for the generation of new biological knowledge. In turn, viewers wondering "how did they do that?" becomes incorporated into the viewing experience (Griffiths 2008).

Comparing blue-chip wildlife films to both static camera footage of animals and crittercams, which all involve footage of animals, teases out of the distinctive features of how the blue-chip format represents wildlife. Blue-chip wildlife programs are a curated, narrative-infused montage of exciting moments of animal life, delivered through footage that displays, illustrates, and demonstrates nature. In contrast, static camera feeds of animals deliberately eschew this curation, offering an unedited view of animal life that allows a long build-up towards periodic milestones. Crittercam footage, wedded to animal liveliness, is not as inherently exciting narrative; stories are built up around questions of how the footage itself was achieved. All three of these genres of wildlife programming involve the visualizing of animal liveliness, and they each offer viewers a distinctive pacing and perspective of animal life.¹⁹¹

Do Representations Affect our Entanglement with Wildlife?

My analysis of blue-chip wildlife footage and my exploration of the above prominent alternative sources of wildlife footage adds to the debate over how representations of wildlife affect real-world relationships between humans and animals. This debate makes central the possibilities for and constraints on "entanglement," or the ways in which the nature-culture boundary is undermined by our interconnectedness. For Evernden, the West's emphasis on vision, and the visualization of nature in particular, "permits us the luxurious delusion of being neutral observers

¹⁹⁰ See Bousé (1998) for an explanation of the excitement-inducing practices within the history of wildlife film, and Mitman (2009) for some of the contributors to this phenomenon, including ethological films' scientific interest in instinctive animal behaviour. Haraway's assessment of "hard to interpret" footage supports Kenton Vaughan's description of chaotic footage of ferrets, which required the "imposition" of scientifically-inspired narration, that I analyze in Chapter 3.

¹⁹¹ Documentary forms combining aspects of multiple genres of wildlife footage mix are also possible. A recent example is *Bear 71* (2012), a National Film Board of Canada online interactive documentary drawing from low-resolution wildlife footage and trailcam images from Banff National Park. The web documentary included narrated footage, an explorable map of the park, and the chance for viewers to surveil each other through their own webcams. It was recently rereleased in conjunction with Google as a virtual reality experience (Matlin 2017).

with the ability to manipulate a distant environment,” (83) which excludes the possibility of kinship or care relations that have been of interest to feminist STS scholarship. Drawing on Susan Sontag’s *On Photography*, Evernden explores how our rupture from nature leaves us with an “acquisitive relation to the world [which] promotes educational detachment” (Sontag 1977, 111 qtd. in Evernden 97). Wildlife films’ acquisitive visualizations resonate with connotations of imperial and colonial mapping. This detachment is exemplified by the God’s-eye view of nature and its “mentalistic ‘camera’s eye’ narrative” within the blue-chip genre, which has been critiqued by scholars interested in a more situated view of nature and for whom alternatives to the blue-chip format offer better possibilities for relationships with the natural world (Haraway 2008, 254; see also Mabey 2005; Ivakhiv 2013). Illustrative and demonstrative blue-chip footage can be interpreted as supporting an acquisitive mastery over nature, particularly as lists of never-before-seen animals and behaviour aggregate for each new wildlife series. The displayed landscapes within blue-chip films, on the other hand, posit a timeless, pristine nature beyond the reach of humankind’s influence; it is a nature that is no longer conceptually tenable (McKibben, 1989; Cronon 1996).

In contrast, others have focused on the benefits of conventional wildlife filmmaking, including its immersive possibilities (Griffiths 2008; Beattie 2008) or the power of beautiful cinematography to attract large audiences and reduce complacency about environmental issues (Palmer 2010).¹⁹² Wilson even argued that the anthropomorphism at work in Disney’s *True-Life Adventure* series of films, whose tropes contributed to the conventional blue-chip genre, preceded the discipline of ecology’s current understanding of living systems as irrevocably interrelated:

At the very least, Disney’s anthropomorphism allows animals to be addressed as *social* beings, and nature as a *social* realm. This suggests a breach in the species-barrier between human and animal. The conservation and preservation documentaries insist on that barrier and reject the possibility of interspecies intimacy [...] Anthropomorphism is thus not a program, but an historical and strategic intervention, a step on the way to understanding

¹⁹² An area for further exploration would be the difference in context for audiences between television spectatorship, which includes commercial interruptions, and film spectatorship, with its more immersive setting (Griffiths 2008). In terms of the latter, viewing a wildlife film in a conventional theatre or within the context of an environmental film festival might alter the same film’s engagement of viewers. The same films can inhabit both contexts, and sometimes the same footage is reused between wildlife broadcast series and films, as in *Planet Earth* and the Disney nature film *Earth*. Adding to the complexity of this issue is the rise of large-screen televisions for home viewership which I described in Chapter 2, as well as the spread of streaming platforms including Netflix, Hulu and others. For example, it is possible to stream episodes of *Planet Earth* on Netflix on a large screen without commercial interruption, distancing the experience from what broadcast audiences would have experienced in 2006.

that the wall between humans and the natural world is not an absolute. It is permeable, movable, shifting, able occasionally to be leaped over (1991, 154-55).

Wilson's focus on "interspecies intimacy" is similar to Evernden's hope for a dissolution of the human-nature boundary into an immersive gradient that better reflects our concern- and care-filled engagements. Evernden contends that dissolution is only possible by taking up a radical project of recentring the subjectivity of animal others, to reaffirm our fundamental kinship with them. This becomes possible, he believes, through the deliberate cultivation of wonder, which "is tantamount to suspending all assumptions" (1993, 141). The results of this decentering would be a new conception of nature itself: Sverker Sörlin claims we can see nature "as part of precisely that entanglement that becomes ever more characteristic of what it means to be human, which in turn means to be more and more part of the nonhuman" (Sörlin 2013, 223). Haraway describes such entanglement through the lens of the relation between humans and our companion "critters": both humans and animals are refashioned by those relations which are situated, historically contingent, and ongoing processes of "becoming-with" (2008, 25).¹⁹³ Paying heed to the reciprocity of those generative relations is key for Haraway, whether through the "animal's eye view" of a crittercam or blue-chip footage that awakens viewers with wonder, visual delights, or a decentering of human perspective.¹⁹⁴ Wonder thus offers a potential rehabilitative role for the blue-chip renaissance. Wonder and the delights of visual spectacle can make central the feminist aims of entanglement, kinship, and the subjectivity of animal others. This is a radical departure for a blue-chip tradition that has been interpreted as subsuming animal others under an objectifying, gendered, and acquisitive gaze (Chris 2006).¹⁹⁵

More work is needed to fulfill Hayles' challenge of "insisting that the interaction between beholder and world partakes of both" to further develop how alternate perspectives of animal life

¹⁹³ A helpful expansion of Latour's treatment of entanglement (2004a) comes from Sörlin:

this is a concept that Latour uses as an image of the blurring and permeated boundary that exists between the human and nonhuman worlds. Whereas previous narratives of modernity focused on the separation of culture from nature and emphasized the superiority of reason and science in relation to the natural world, entanglement signifies the rising currency of a rather different narrative. We become ever more enmeshed through science and technology and through the way we lead our lives and engage with nature everywhere. (2013, 213)

¹⁹⁴ Reciprocity occurs not only within human attitudes about our companion species but also within a physical *reshaping*. See Kirk (2005) on how laboratory animals both shape and are shaped by human practices.

¹⁹⁵ Feminist film scholarship has been interested in elaborating the concept of the gaze (*le regard*) from its origins in Sartre's existential philosophy to its application to critiques of patriarchal classic and contemporary cinema. The "male gaze," as described by feminist film theorist and filmmaker Laura Mulvey, is a gendered power asymmetry wherein passive female cinematic bodies are objectified by the camera, male characters, and spectators (1975).

afford and inhabit our popular consciousness of nature (Hayles 1995, 425). Despite the above and other scholarly interest in the topic of entanglement, determining the specific or diffuse impacts of varieties of wildlife representations on viewers' actions or attitudes remains a challenge. I explore some of the attempts to measure these impacts in the conclusion of this dissertation.

Conclusion

Wildlife films represent animal behaviour in a variety of ways, and the blue-chip renaissance is a specific setting for the production and circulation of knowledge claims about animal behaviour. In this chapter, I offered an account of such representation as an overlapping taxonomy, including how the visual evidence of animal bodies and behaviour is deployed in three distinct types of footage: footage acting to display, illustrate, and demonstrate nature. I showed how on-screen footage stands in for animals in the wild, entire species, and biological concepts. This representation serves as a public-facing model of these targets, with a principally-educational function. However, there are cases where these models add to scientific knowledge about nature. Simulation is an even more specific categorization for wildlife footage, based on wildlife footage's enacting and reenacting of behaviour, and related to unreliable animal subjects' ability to confound. Wildlife films' educational mandate, and filmmakers' ability to speak authoritatively for nature, relies on this fluidity of representations. I also discussed alternatives to the blue-chip wildlife genre and how those formats influence the representation of nature.

Chapter 5 Performing Authenticity: The Making-of Documentary in Wildlife Film's Blue-Chip Renaissance

Introduction

In the fall of 2016, a piece of footage from the BBC Natural History Unit's landmark series *Planet Earth II* gained remarkable popularity on the internet. In the sequence, from the series' first episode, "Islands," a newly-hatched iguana makes a treacherous journey across a sandy beach and volcanic rocks of Isla Fernandina in the Galapagos Islands (BBC Earth 2016a). The iguana is set upon at every turn by a seemingly-endless swarm of racer snakes emerging from their hiding places. The snakes pour out from all sides, narrowly missing the iguana as it races and leaps up the rocks. During the harrowing chase, the snakes' snapping jaws repeatedly miss the iguana's limbs and tail. All seems lost when the iguana gets ensnared in a cluster of snakes, whose many coils loop around its body [1:23]. But the iguana manages to break free and scamper up the rocks, with more snakes still in pursuit; the chase footage includes a close-up of the iguana as it leaps, portage-style, up a vertical crevasse and from a rocky peak to the safety of a higher ledge where the snakes can't follow [1:52]. "A near-miraculous escape" describes narrator David Attenborough in his characteristic hushed whisper. The video, titled "Iguana vs Snakes - Planet Earth II" was uploaded November 8th, two days after the episode's UK premiere. It had been seen nearly 7.4 million times on BBC Earth's Youtube channel by the end of 2016 (BBC Earth 2016a) and won the popular vote for the *Virgin TV Must-See Moment* BAFTA Award (Holmes and Lambert 2017). To capitalize on viewers' interest in the segment and *Planet Earth II*, BBC Earth simultaneously released two short making-of-documentaries (also known as MODs) offering behind-the-scenes footage of the filmmakers at work (Dvorsky 2016).

The first MOD about the iguana-snake chase was "Planet Earth II 360: Islands," a 360-degree navigable video, offering viewers a chance to experience a panoramic sweep of the iguana's rocky beach environment as well as observe the filmmakers on location.¹⁹⁶ David Attenborough narrates the film, providing traditional natural history commentary about the iguanas, Galapagos fur seals, and blue-footed boobies (BBC Earth 2016b). The second MOD was "Iguana vs Snakes - Behind the Scenes - Planet Earth II," a minute-long video about the chase scene emphasizing the "never before filmed" behaviour. The video's on-screen text reads "The Planet Earth II crew were

¹⁹⁶ The video description states "Marine iguana vs racer snakes - A 360 tour to the heart of this nail-biting sequence."

filming hatchling marine iguanas, what happened next had never been captured before...” The scene included a shot of BBC cameraman Richard Wollocombe crouching in the sand in the foreground while an iguana runs for the rocky cliff and is enveloped by the snakes (see *Figure 4*).¹⁹⁷ “This is the first time snakes have been filmed hunting en masse,” the text continues, superimposed above footage of the writhing snakes, “... but they aren’t working together. It’s every snake for itself.” The top comment, by Youtube user “Fido Saurus,” was “I thought they used drones to record it but nope, the cameraman was there near the scene. Very brave” (BBC Earth Unplugged 2016). In addition to furthering popular interest in the chase scene as well as *Planet Earth II*, these MODs were an opportunity for the BBC to showcase their filmmakers on location, supporting the authenticity of their “never before filmed” achievement in natural history filmmaking.¹⁹⁸

A key aspect of the resurgence of blue-chip wildlife films is the heightened prominence of behind-the-scenes footage and making-of documentaries. A MOD is a documentary film about filmmaking, offering audiences behind-the-scenes access to the production context within which filmmakers operate (Hight 2005). In this chapter, I show how MODs allow filmmakers and broadcasters to authenticate their wildlife footage by making its context of production more public and transparent. Drawing on discussions of MODs within film studies and documentary theory, qualitative interview results from wildlife and environmental filmmakers, and a case study of the promotional MOD trailer for the DisneyNature film *Chimpanzee* (2012), I argue that the unprecedented prominence of recent MODs for wildlife films involve the performance of authenticity, through depictions of filmmakers at work and the disclosure of particular filmmaking

¹⁹⁷ In a Guardian article describing how the sequence was filmed, Wollocombe explains

It is understandable that so many people have been fascinated and terrified by this footage. One snake hunting prey is usually enough to transfix us and engage our instinctive mammalian fear of snakes. But a mass of them hunting is the stuff of nightmares! I think the reason this sequence has generated so much attention is because people are naturally rooting for the cute and innocent hatchling iguanas, which face a truly horrifying situation. So when one little marine iguana miraculously escapes the inescapable the relief we feel is tangible (Wollocombe 2016).

¹⁹⁸ In a February 2017 interview, Elizabeth White, *Planet Earth II* producer and director of the “Islands” episode, had described the sequence’s filming and editing process to *Vulture* reporter Jesse David Fox, emphasizing the issue of camera operators not knowing which segments were in focus until the end of the day’s filming (Fox 2017). Subsequent media reports describe how White admitted that sequence included footage of multiple iguanas, edited together, at London’s Media Production Show in June 2017 (Holmes and Lambert 2017; Hooton 2017; Mitchelson 2017). See Chapter 3 for a discussion of editing as a story-enhancing practice within wildlife filmmaking.

techniques.¹⁹⁹ The transparency of these MODs, however, is only partial. In contrast to the “claimed artificiality” (Gouyon 2016) of earlier wildlife MODs which revealed certain staging practices of wildlife filmmaking, I argue that the MODs of the blue-chip renaissance instead aim to enhance the genre’s authenticity, through MODs’ observational realism as well as their emphasis on the remoteness of film locations, filmmakers’ exceptional skills under challenging conditions, and the innovative technologies responsible for wildlife films’ spectacular visuals.



Figure 4: Screenshot from “Iguana vs Snakes – Behind the Scenes – Planet Earth II” video. © BBC Earth. This shot of the behind-the-scenes video shows cameraman Richard Wollocombe crouching on the volcanic beach where the chase sequence from the viral video “Iguana vs Snakes - Planet Earth II” took place. The BBC added the on-screen name, job title, and arrow identifying Wollocombe. (BBC Earth Unplugged 2016)

A History of MODs

MODs have accompanied feature films throughout the history of filmmaking, with the first identified MOD (*Making Motion Pictures: A Day in the Vitagraph Studio*) produced in 1908 (Arthur 2004, 39). Some MODs are the length of the films whose production they describe; in rare cases, the MODs become recognizable film releases in their own right, such as *Hearts of Darkness: A Filmmaker’s Apocalypse* (1991), the feature-length MOD for the film *Apocalypse Now* (1979).

¹⁹⁹ See the Introduction for an in-depth explanation of the methodology for my qualitative interviews with wildlife and environmental filmmakers.

Most MODs are more peripheral to their target films, as they tend to range between 2 and 50 minutes in length. Craig Hight has argued that the making-of documentary “has become a key means of conveying large amounts of information about a film’s production in easily accessible ways for home audiences” (2005, 5). The information-conveying role of MODs has been contrasted with their use as promotional material, where many bonus features are similar to the electronic press kits (EPKs) released to the media alongside a feature film’s release (Hight 2005, 7). As a result, film scholarship has not treated MODs seriously; perhaps because “at first glance, their purpose as a marketing tool is transparent” (Sullivan 2008, 69).

A confluence of factors has contributed to the current prevalence of MODs as peripheral material for film releases in general. The advent of the digital video disc (DVD) format for home viewership meant there was unprecedented storage room for supplementary materials compared to previous formats (Hight 2005, 4). Following the critical and commercial success of the *Criterion Collection* of film releases, which accustomed viewers to “a range of exhaustively researched additional materials that attempt to deliberately position a film within its industrial, social, and political contexts” (Hight 2005, 5) including director commentary and storyboard frames, film studios amended a variety of bonus materials to film releases on DVD, particularly when packaged as the film’s “special edition.” In addition to making-of documentary material, examples of the types of bonus materials available include trailers, subtitles, commentaries, footage not included in the theatrical release including extra scenes, outtakes, or alternate endings (Hight 2005, 10).²⁰⁰ Film studios competed to have their “special edition” DVDs stand out, as they were generally more expensive than the standard release and needed to seem worth the money (Reesman 2001).

Scholarly interest in MODs tends to focus on labor relations revealed in the depiction of film industry professionals within an MOD. John Sullivan describes a rhetoric of “the exceptionalism of creative labor” (2008, 79) in the superlatives used by interviewed actors and directors describing each other’s commitment to the film project:

The efforts and abilities of the creative personnel featured in the documentary are depicted as exceptional and unique. Everyone seen or mentioned by name in the featurettes is shown making seemingly critical decisions, and even the tiniest details are portrayed as significant creative choices. (2008, 79)

²⁰⁰ Bonus features can also include storyboards, animations, interactive sequences, media coverage, DVD-ROM content, hidden content “Easter Eggs,” film scripts, details about any restoration practices applied to older films, and games (Hight 2005, 10).

As a result, the MOD genre overlooks the majority of film professionals at work, many of whom are highly skilled and specialized, yet work in increasingly precarious, freelance positions (Wasco 2003). MOD narratives promote creative professionals, especially film directors, as “auteurs” based on their unique contribution to the creative direction of the film (Brookey and Westerfelhaus 2005; Arthur 2004, 40).²⁰¹ Sullivan describes auteurship rhetoric in MODs for other categories of creative professionals, including actors, writers, and producers: “the accolades exchanged by key Hollywood personnel function to define creative labor as unique and exceptional, requiring enormous commitment, expertise, and perseverance” (2008, 77).²⁰² The neglect of less-prestigious film crew categories and the vocabulary of creative exceptionalism are both observable in the *Chimpanzee* making-of trailer described later in this chapter, as the named filmmakers lavish praise on each other’s specific abilities while several crew and camera operators are not identified and do not appear as talking heads.²⁰³ Such exceptionalism within the *Chimpanzee* making-of trailer both follows the pattern of MODs in the film industry more generally, and contributes to the emphasis of wildlife filmmakers’ professionalism furthering the perceived authenticity of the resulting footage that is portrayed as being only possible through their exceptional expertise and hardiness. In this way, the *Chimpanzee* MOD enhances the authenticity of its “parent” film by showing these exceptional filmmakers performing this work on location.

MODs in Wildlife Filmmaking

Not all MODs within the history of wildlife filmmaking have employed the same strategies or shared with recent MODs the aim of emphasizing their films’ noninterventionist authenticity. Earlier MODs had thoroughly different goals, and offer a stark contrast to current MODs featuring filmmakers on location. Wildlife film historian Gouyon, whose research explores the ways in which natural history filmmakers have positioned themselves as both authoritative sources of

²⁰¹ The notion of “auteurship” in cinema studies originates in Sarris (1962).

²⁰² In addition, scholars have taken up the project of describing the novel meaning-making opportunities afforded to DVD viewers (Hight 2005). Arguably, the blue-chip renaissance offers even greater interpretive flexibility than does a special-edition DVD, in that bonus features, MODs, and supplementary material are located not only as bonus features on the DVDs of wildlife series, but also as part of the main broadcast of a program, trailers, and online video clips.

²⁰³ Sullivan is critical of this rhetoric of exceptionalism for being an unrealistic portrayal of moviemaking and its anonymous, interchangeable workforce: in MODs, “the tone of respect, enthusiasm, and even reverence for the creative effort of these individuals betrays a certain level of self-indulgence, particularly since their ostensible aim is to open up the inner workings of Hollywood to the viewing audience” (2008, 77).

footage of nature as well as producers of new knowledge about the living world (2011a, 2011b) has more recently investigated the earliest wildlife MODs from the BBC's Natural History Unit. The BBC employed making-of documentaries as early as the 1960s to showcase their filmmaking practices and technologies to make nature visible in new ways (Gouyon 2016). Gouyon positions wildlife film MODs as emerging during the transition between earlier amateur naturalist filmmaking and the professionalization of wildlife filmmaking around the 1960s and 70s in Britain. The MODs of this period, including the BBC's *The Making of a Natural History Film* (1972), focus not on promoting realism, but on illuminating the staging practices (sometimes performed in-studio) and technical skills required to grant viewers proximate access to animals that could not be otherwise obtained, as well as to enroll filmmakers and their science consultants into a collaborative enterprise of knowledge production (Gouyon 2016, 96). Gouyon describes this attitude as being a stance of "claimed artificiality" where filmmakers "own up to" their staging practices, such as the construction of enclosures. In such MODs, viewers are enlisted as "virtual witnesses" (Gouyon 2016, 85) exposed to "film-makers' 'property of skill', their capacity to control nature so as to generate valuable knowledge from it" (Gouyon 2016, 85; see also Shapin and Schaffer 1985). In such MODs, the construction of enclosures within a film studio was framed not as artifice, but as affording new windows into the workings of nature based on the professional expertise of natural history filmmakers.

To illustrate the emergence of "claimed artificiality" within wildlife film MODs, Gouyon compares two wildlife films on migratory birds. The first is *The Flight of the Snow Geese* (1972) which intersperses footage of wild and tame geese and includes the narrative of the rearing and training of orphaned chicks by the filmmakers themselves.²⁰⁴ Gouyon also examines the more recent film *Winged Migration* (2001) whose extensive use of tame birds is not discussed within the film but instead in a lengthy MOD *The Making of Winged Migration* (2002).²⁰⁵ The MOD reveals and legitimates the film's extensive staging practices (including the imprinting of tame birds and the transportation of those birds to different film locations around the world) as firmly part of the film's knowledge production activities.²⁰⁶ This MOD is necessary, contends Gouyon,

²⁰⁴ The film was directed by Des Bartlett and Jen Bartlett and was produced by Colin Willock for the *Survival* series.

²⁰⁵ *Winged Migration* was directed by Jacques Perrin.

²⁰⁶ Including research conducted by one of the film's scientific advisors, Henri Weimerskirch, during the film production process; see Gouyon (2016, 91).

because trends in wildlife filmmaking mean that there is no longer space within the main narrative of the film for filmmakers and their interventions, which was not the case for *The Flight of the Snow Geese*.

Gouyon's "claimed artificiality" is a useful category which adds to the analysis of MODs that reveal particular staging practices to the audiences of wildlife programming. However, more recent wildlife films deploy MODs with contrasting motivations. Within the blue-chip renaissance, there is both a new prominence of MODs and a return to claims of non-interventionist filmmaking in the explicit marketing materials of wildlife programming: their emphasis on filmmakers sent to remote locations, on wildlife filmmaking "firsts," and on film technologies designed to minimize any mediation between viewers and animals.²⁰⁷ As a result, many of these MODs do not subscribe to the "claimed artificiality" seen by Gouyon within earlier examples of MODs that showcase particular staging practices such as the building of enclosures or the use of imprinted animals (Gouyon 2016).²⁰⁸ Viewers are unlikely to be aware of any enclosures employed in wildlife programming, save for those described in the aftermath of allegations of staging, such as the one constructed to film the birth of the polar bear for *Frozen Planet*.²⁰⁹ And while series' websites may offer videos describing the staging of particular footage reminiscent of the BBC's early MODs, such disclosure is generally a reaction to periods of critical attention following allegations of staging. Unprompted disclosure does not occur with nearly the same frequency (Palmer 2010); such a level of transparency would undermine the promotional and marketing activities of the blue-chip renaissance.

Today's MODs not only present specific new film technologies, but also offer expeditionary narratives that are no longer as prominent in mainstream wildlife filmmaking. They often emphasize filmmakers' hardiness, the difficulties of filming in extreme environments, and in particular, the challenges of locating and filming specific animal behaviour. These correspond

²⁰⁷ See Chapter 2 for a characterization of these elements' contribution to a new iteration of natural history spectacle.

²⁰⁸ Although these can still be seen on films and series' accompanying websites, they are nowhere near as prominent as the *Planet Earth Diaries*, which were available to the series' viewers during the main broadcast of *Planet Earth*. These 10-minute featurettes, bonus material from the *Planet Earth* series, showed the filmmakers at work in extreme locations, demonstrated the dangers to filmmakers posed by the wild animals they were attempting to film, and focused on innovative camera equipment or technologies that helped filmmakers meet the challenge of filming in the wild. In 2006 and '07, *Planet Earth* included their *Diaries* segments as the final 10 minutes of each episode, but they maintained a strict demarcation between these human, expeditionary narratives and the purely animal footage that is the stock-in-trade of the blue-chip genre.

²⁰⁹ This follows Morus' description of the "strategies of disclosure and concealment" from scientific performers (2006, 105).

to the traits of naturalists dedicated to observation, the nonprofessional natural history filmmaker operating as “silent watcher” or “unarmed hunter” (Gouyon 2016, 96, 95). These MODs do not in general showcase filmmakers’ mastery of nature by offering the details of staging techniques, but offer additional evidence that the filming on location took place as advertised. Such content reflects the blue-chip renaissance’s movement away from the acceptability of “interventionist” wildlife filmmaking (Gouyon 2016, 87): while it’s true that wildlife filmmaking is a literal construction of images of nature, and direct interventions still occasionally take place to generate filmable animal behaviours, the acceptability of such interventions has seemingly vanished, given the criticism engendered by allegations of staging episodes.

The travelogue style of wildlife filmmaking from the early decades of the twentieth century, featuring expeditionary narratives, itself involved a manner of showcasing behind-the-scenes material. Accounts of hunting for game animals, photography, and specimen-collecting expeditions have long been a feature of wildlife filmmaking. Mitman's (1999) account of the history of American wildlife films describes how many of these films depicted members of these expeditions on their quests for game specimens and footage. Many of these films were sponsored by natural history institutions or museums, such as former president Theodore Roosevelt’s expedition to Africa, which was sponsored by the Smithsonian in 1909 and resulted in both film of game animals being hunted, and the collection of more than eleven thousand animal specimens for the Smithsonian and the American Museum of Natural History (Mitman 2009, 5-6). In addition to the films themselves, peripheral written material was commonly produced, including books and articles by filmmakers and photographers describing their journeys (eg. Kearton 1929).²¹⁰ This genre of writing offers readers a glimpse into the exertions undergone by filmmakers on location, as well as describing the practices and equipment they use to obtain footage of animals. Written accompanying material continues to be produced for the films and series of the blue-chip renaissance, as in the example of *Planet Earth*’s companion behind-the-scenes book *Planet Earth: The Making of an Epic Series* (Nicholson-Lord 2006). These books and articles, while no longer offering the same frontier narratives of early expeditionary wildlife film, nevertheless rely on narratives of arduous travel to remote locations, as well as the global reach and complex logistics of wildlife productions. The MODs of the blue-chip renaissance also often employ a travelogue

²¹⁰ More recent examples include Parsons (1963; 1971); Boswall (1997); Gray (2002); Gordon (2002); and Palmer (2010).

style, showcasing the difficulties of reaching film locations and finding the wildlife in question; indeed, these travelogues could be classified as a subspecies of “journey film” which originated within observational documentaries (Bruzzi 2000, 73).

In addition, while Gouyon’s characterizes wildlife MODs emerging during the 1960s and 70s, focusing on their purpose of scientific validation of professional natural history filmmakers, a broader historical treatment of wildlife MODs within the history of filmmaking offers valuable context of their more general role in showcasing the exceptional professional qualities of filmmakers. As a result, these MODs engage in discourses that both highlight the very qualities that Gouyon describes as belonging to an earlier, pre-professional period of natural history filmmaking, as well as echo characterization of the auteurship and exceptionalism of the filmmakers involved (Sullivan 2008). As I show in the *Chimpanzee* case study, this exceptionalism is employed in service to the MOD’s observational realism and its positioning of difficult-to-film chimpanzees as the charismatic targets of the cinematic endeavour. First, however, it’s helpful to examine how the legacy of issues of authenticity within photography and film. Not only do wildlife MODs no longer show filmmakers engaged in the staging practices of “claimed artificiality” described by Gouyon, but in addition, questions about MODs’ ability to authenticate footage are linked to the legacy of documentary film and its photographic precursors’ claims to represent reality. The authenticity of wildlife footage is thus bound up in the rich history of documentary and photographic authenticity.

Gouyon contends that the claimed artificiality of MODs developed in response to the gradual Latourian “purification” of wildlife films into the blue-chip genre (Gouyon 2016, 86). Latour, in *We Have Never Been Modern* (1993), describes modernity’s overarching desire to classify and distinguish according to a nature-culture binary. For Latour, this compulsion aims to generate scientific accounts and representations of nature that have been purified of social influences, belying their hybrid state as co-constructions implicating both nature and culture. Gouyon describes how the human narratives were relegated to MODs thanks to their banishment from the blue-chip genre’s purified visions of wildlife: the MOD “arose from the necessity to remove from the [wildlife] films everything that could destroy the atmosphere filmmakers were trying to create and therefore reduce viewers’ pleasure” (2016, 97).

However, purification is not merely an ideological commitment or a reflection of audience’s love for purely animal programming. As I described in Chapter 2, the high-budget blue-

chip style of wildlife filmmaking, which eschewed human participants and involved animal footage that could easily be reused, rearranged, or shown internationally, gained ubiquity through the BBC Natural History Unit. Such wildlife producers collected “libraries” of footage of animal behaviour; this footage found its way into different types of programming as stock footage for television programs, films about particular species, anthologies, educational materials, and films for international distribution. Richards (2013a) has argued that the BBC’s Natural History Unit had this strategy in mind when the unit was founded: the discrete segments of stock footage circulate and are appropriated into different contexts while retaining their depictions of individual animal behaviour. As a result, they can be considered immutable mobiles (Latour 1987) and follow in the tradition of the circulation of natural history images which “acted as visual avatars replacing perishable or untransportable objects” (Bleichmar 2011, 392).²¹¹

Stella Bruzzi argues that “documentary does not perceive its ultimate aim to be the authentic representation of the real” and that instead we find within documentary films the dialectical conjunction of reality and filmmakers consisting of the event and its representation” (2000, 9). Bruzzi disagrees with Nichols’ (2001) framing of documentary modes, within which performative documentaries were denigrated for obscuring their content and drawing attention to the filmmakers. Instead, for Bruzzi, the performative documentary genre of “journey film,” of which these MODs are a subspecies, are both describing and performing an action. Following Bruzzi, Gouyon has described MODs as constituting “scientific performance” in that they offer “evidence of film-makers capacity to control nature so as to generate valuable knowledge of it” (2016, 98). But wildlife MODs can be performative without subscribing to the particular stance of “claimed artificiality” or of showcasing staging techniques such as those described by Gouyon (2016) that predate the blue-chip renaissance. Following Gouyon and Bruzzi, then, I interpret the *Chimpanzee* MOD as a film that both describes by showing filmmakers at work, and performs by

²¹¹ Bleichmar (2011) calls attention to the tensions inherent in the divide within the discipline of natural history between the local, encountered through European expeditions to distant locations in order to obtain specimens and images, and “the dislocated global”; the latter was considered “objective, truthful, and permanent” through the erasure of local context:

The natural history illustration depicts a decontextualized, isolated specimen upon the white background of the page, a background that both frames and erases. Given the impressive powers of the naturalist’s eyes to identify and classify, it is remarkable just how much these trained eyes chose not to see and not to show. The naturalist’s gaze was extraordinary selective not only about what it noticed but also about what it disregarded [...] Efforts to make global nature visible always involved making parts of it invisible. (2011, 392)

showcasing the particular narrative of the strenuous conditions in the rainforest and the filmmakers' exceptional commitment to obtaining footage of animals.

MODs and Wildlife Film Authenticity

How do MODs contribute to authenticity in wildlife filmmaking? Wildlife documentaries face even greater scrutiny about their representational claims than do documentaries in general, thanks to the genre's explicit claims of showing real nature, its educational mandate, and its widespread history of staging animal behaviour while claiming to provide authentic footage of wild animals.²¹² In previous chapters I have described multiple examples of scandals involving high-profile wildlife filmmakers who were found to have generated particular sequences of animal behaviour. Wildlife filmmakers have promoted the authenticity of their content through implicit and explicit appeals to institutional prestige, filmmaker trustworthiness, and technological innovations in filmmaking practices and equipment (Mitman 2009). Current MODs have an especially prominent role in validating wildlife footage in recent wildlife films of the blue-chip renaissance, including their use as promotional trailers, bonus features on DVD releases, accompanying websites, and in particular their novel positioning within the broadcast of the wildlife film itself, as was the case for *Planet Earth* and some subsequent series. This shoring-up of authenticity makes public and central the practical and technical conditions of wildlife film production to an unprecedented degree.

The move towards non-interventionist wildlife filmmaking, and the subsequent purification of human narratives from blue-chip wildlife programming, can be interpreted through Hugo Reinert's account of the "constitutive withdrawal" of bird-watchers tracking the international migration of endangered Lesser white-fronted geese. Reinert describes how the conservation effort for this species has shifted from human observers in the field to a less-present form of wildlife surveillance: radio telemetry. For Reinert, this shift is an example of practices of withdrawal, wherein "technologies of wildlife surveillance suspend not only reciprocation, but ideally all their own material effects on the surveilled. Wildlife surveillance technologies minimise themselves continuously, approaching an impossible, ghost-like condition of spectrality" (2013, 9). Reinert makes explicit the link between disembodied surveillance and Haraway's "god-trick"

²¹² See Chapters 1 and 2 for discussions of the tensions between education and entertainment within wildlife documentary.

of the possibility of pure observation (1988). Of course, the surveillance of these “Lessers” is not entirely disembodied; Reinert focuses on how their transmitters, no matter how lightweight, involve a “material heft”: “in a sense, this is gaze rendered mass, made lingering haptic fact” (2013, 12). The current preference for radio telemetry, despite requiring human presence in the initial capture and preparation of the birds whose migrations will be tracked, has altered the traditional human-animal encounter between birdwatchers and their target “Lessers.” For Reinert, it is through constitutive withdrawal that “Lessers” come into being within this surveillance, through a “paradoxical absent-presence” of human concern and attention (2013, 22). These birds’ endangered status gives them a fragility that must be met with “a human presence that conceals itself in the exercise of its power — preserving its elusive object, and the fragile elusiveness of that object” (2013, 22). The geese come into being within careful boundaries of wildness: if they are ignored, the species is at risk of extinction, but if they are protected through direct intervention, they would no longer be migratory entities of wildness. The blue-chip renaissance’s focus on technological innovations that facilitate a decreased mediation in capturing footage of wildlife offers a parallel to this constitutive withdrawal, and the MOD narratives championing these non-interventionist technologies (such as the heligimbal camera, the cine-bulle, or the canopy-camera apparatus designed for the film *Chimpanzee*) position them as minimizing their effects on the wildlife being surveilled. These camera technologies, of course, have a material reality that undermines rhetorics of unmediated perspectives of nature. This materiality emerges within MODs featuring filmmakers’ innovation at solving technical challenges of filming on location.

Wildlife MODs’ observational realism in support of their “parent” films is linked to the blue-chip renaissance’s emphasis on the inclusion of rare or never-before-seen footage of animals in the wild, such as the iguana-snake chase I described at the beginning of this chapter.²¹³ As I have previously described, Chris claims in the introduction to *Watching Wildlife* that the wildlife film genre has passed through three main historical stages: it “shifted from a framework in which the animal appears as *object* of human action [...] to an *anthropomorphic* framework, in which human characteristics are mapped onto animal subjects, to a *zoomorphic* framework, in which

²¹³ Establishing priority of observations of new specimens has been significant within the discipline of natural history, as priority determined what a new species would be named. This was challenging for naturalists working remotely, whose specimens and illustrations had to be sent long distances for authentication (Bleichmar 2011, 390).

knowledge about animals is used to explore the human” (Chris 2006, x).²¹⁴ Chris’ periodization roughly maps unto early wildlife films of travelogue or hunting expeditions, which involved narratives of seeking out desired animals, especially big game (Mitman 1999), followed by televised nature programming epitomized by the Disney *True-Life Adventures* which heavily anthropomorphized animal life (Bousé 1998; 2000; MacDonald 2006), to more recent wildlife programming that positions human beings within a continuum of animal instincts and naturalizes certain social and gendered categories (Mills 2013). However, the prestige of 21st-century blue-chip wildlife programming is linked to its claims of delivering authentic content, evidenced through behind-the-scenes footage of dedicated filmmakers facing the challenges of obtaining rare footage on location. As a result, the narratives within MODs are similar to those from early expeditionary wildlife films. I contend that the blue-chip renaissance represents a return to the animal-as-object for filmmakers, which has accompanied the promotion of non-interventionist filmmaking practices through MODs’ observational realism. Wildlife MODs are similarly structured as journey films whose destination is the hard-won achievement of footage of specific animals or behaviour, especially if it has never before been captured on film. Within the blue-chip renaissance, MODs highlight the on-location hardiness of exceptional filmmakers during the journeys leading to these prize “firsts,” and in so doing promote authenticity via observational realism.

Recent high-profile instances of filmmaker staging, as described in the previous chapters, illustrate complex interactions between filmmaker reputability, audience expectations (both in terms of their perception by filmmakers and their violation when viewers criticize instances of staging), and evolving standards and transparency on behalf of broadcasters. The enhanced positioning of behind-the-scenes material is a transparency-enhancing strategy on behalf of wildlife film producers like the BBC’s Natural History Unit, because viewers can witness filmmakers at work on location and receive additional context surrounding the conditions under

²¹⁴ The most popularized, albeit crude, example of zoomorphism I can think of is the chorus from alternative band Bloodhound Gang’s song “The Bad Touch”: “You and me baby ain’t nothin’ but mammals, so let’s do it like they do on the discovery channel.” Mitman included the lyric in his 2009 Afterword to *Reel Nature*, in a section devoted to “pop-culture references to animal sexuality”; this is contrasted with the slightly tamer example of Gerald from *The Full Monty* who “embarrassingly admits to his friends that he gets sexually aroused watching nature programs” (Mitman 2009, 211). Both of these examples appear in Chris’ *Watching Wildlife* (2006, xv, 122). Both authors could have equally included a 2002 episode of the series *Friends* titled “The One with the Sharks” in which the character Monica mistakenly believes her husband Chandler is aroused by shark documentaries.

which particular footage was achieved.²¹⁵ However, not everything that takes place behind the scenes is recorded. MODs only selectively showcase certain aspects of filmmakers at work and their equipment, due to the magnitude, logistics, and cost of a blue-chip wildlife production, as well as the time constraints and financial resources devoted to the MOD itself (Hight 2005, 6). It is not reasonable or desirable, for instance, to expect eight weeks' worth of behind-the-scenes footage of BBC *Planet Earth* cameraman Paul Stewart waiting to capture the remarkable full courtship display of the bird of paradise.²¹⁶ Instead, the MOD demonstrates Stewart's boredom and frustration in order to emphasize how the eventual capture of the desired footage was such an achievement (Discovery 2007). Stewart's experience epitomizes Park's characterization from the history of scientific observation wherein "the pleasure and exaltation when the tedium of the observational routine was interrupted by the occasional spectacular sighting" (2011, 35).

While MODs have been employed to describe the details of particular staging techniques (Gouyon 2016) the accessibility of those MODS compared to that of their "parent" wildlife film has been a target of the criticism of wildlife staging practices. For example, there is a MOD of the construction of the zoo den enclosure from which the birth of a polar bear was recorded for the series *Frozen Planet*, located on the BBC's website (BBC 2011). The BBC pointed to the existence of this MOD as evidence of the broadcaster's transparency following the criticism, although critics pointed out that the MOD would not have been seen by all viewers of *Frozen Planet* because the "hard-to-find video" (Gladdis 2011) was not broadcast as a *Diaries* segment following the program (BBC News 2011). The role of the *Frozen Planet* polar bear enclosure MOD in the staging controversy of 2011 reveals how the practices of transparency within the blue-chip renaissance do not occupy the same stance of "claimed artificiality" described in Gouyon (2016)'s characterization of the *Winged Migration* MOD. It is not the case that sophisticated staging

²¹⁵ An exchange in the comment section of Hooton's article about the iguana-snake chase sequence illustrates this perceived link between MODs, observational practices, and authenticity: User "chazwomaq" commented: "Fantastic cinematography. Just try not to remember that the crew probably dropped that lizard into the pit of snakes in the first place" while user "Cardinal Fang" replied "Do you have any evidence whatsoever for that claim? Because I've just watched the behind the scenes footage of that, where they basically just set up the cameras and see what happens" (Hooton 2016).

²¹⁶ Including the 300 hours Stewart spend filming in a hide. A shortened MOD from the *Planet Earth Diaries* on the Discovery Channel's website, "Making Jungles," shows the film crew interacting with the local native Huli tribe, making their way to the filming location over a muddy road and an unsafe bridge, and Stewart waiting in the bird hide. He captures footage of a few male birds of paradise, but his work is not considered successful until a female arrives and he can capture the entire dance on film. The MOD's narrator emphasizes Stewart's "special low-light camera" [1:20] needed because the birds are active in the underbrush from the very early morning onwards. In the MOD, Stewart's eight weeks of waiting are condensed into 40 seconds (Discovery 2007).

practices no longer occur; thanks to a shift in the broadcast landscape's orientation, "claimed artificiality" is no longer an acceptable stance for these productions. Blue-chip productions involve both a massive financial and logistical commitment to sending filmmakers on extended shoots in remote locations, as well as the subsequent publicity of the achievement of capturing authentic footage through MODs involving practices of observational realism.²¹⁷

A component of this renewed commitment to on-location, non-interventionist filmmaking, as well as the latter's importance in the promotional tactics of the blue-chip renaissance, is the series of highly-publicized partnerships between wildlife filmmakers and wildlife heritage sites. While wildlife filmmaking has commonly taken place in national parks and other protected areas, this filming context was not necessarily revealed to viewers. The exclusivity model of conservation, which focuses on keeping people out of protected areas (Saberwal, Rangarajan, and Kothari 2001), means that such areas are readymade settings for blue-chip footage. But current and planned filmmaking projects involve marketing strategies designed to enhance publicity and support for conservation initiatives. Under these partnerships, filmmakers gain exclusive access to environments and wildlife, including endangered species whose inclusion in the film is beneficial to its promotional strategies. The highest-profile example of such a partnership is *Our Planet*, produced by Silverback Films for distribution over Netflix, with an expected release in 2019.²¹⁸ This series is the result of a partnership with the World Wildlife Fund (WWF). The press release describes how *Our Planet* "will bring millions of people into intimate contact with some of the world's rarest animals and most precious natural habitats" and how the WWF "is providing the Silverback team unparalleled access to its projects in protected areas around the world" (World Wildlife Fund 2015). The press release emphasizes the "never-before-filmed wilderness areas" that viewers will experience, and expeditions to these diverse areas will be showcased in behind-the-scenes "journey film" material. The publicity surrounding film productions' use of these protected areas for on-location filmmaking further enhances the authenticity of the series' footage, as it serves to emphasize that wildlife filmmakers went to those remote places to locate and film rare animals.

²¹⁷ See Chapter 2 for examples of the publicity of *Planet Earth*'s "firsts."

²¹⁸ The blue-chip wildlife film production company Silverback Films was founded by Alastair Fothergill and Keith Scholey in 2012. The company has produced four DisneyNature wildlife films, as well as several series for television. Fothergill was a long-time series producer at the BBC's Natural History Unit, responsible for the production of the *Planet Earth* and *Blue Planet* series and their associated films *Earth* and *Deep Blue* (WWF 2015).

Filmmakers on MODs in the Blue-Chip Renaissance

Wildlife and environmental documentary filmmakers' impressions about the prevalence of MODs illuminate their assessment of the role of such material within the production of their documentaries, as well as their perspective on how viewers experience this programming. My interviewees reinforce the characterization of their profession from the pre-professional era described by Gouyon (2011a; 2016) through their focus on MOD's ability to reveal to audiences the challenges of their on-location filming.²¹⁹ As a result, these filmmakers' perspectives support the claim that MODs contribute to the authenticity of wildlife programming, in particular by emphasizing the challenging on-location conditions experienced by the crew.

Blue-chip wildlife filmmaker Jeff Turner described the popularity of MODs for the series he's worked on, and ties this popularity to his assessment that audiences are interested in the rigours of on-location filming and "what the filmmakers go through":

JT: *They're very popular with the audience, and again I think it gets back to this whole idea of how the audience views natural history films in the sense of what the filmmakers go through in order to capture these sort of real and true moments. And I think that enhances the audience's sort of appreciation of the film that they watch. So knowing what we went through to do that makes them enjoy that a bit, the films that much more. But I think it's kind of unique to natural history filmmaking, and I think they're very successful and I think the audience they just enjoy them. It's funny because I did this natural history series for the BBC called Wild Canada in the spring, and at the end of the series, we did a a making-of program, the 5th program was sort of a look at how we went about it and made the series. And I talked to so many people who said that was their favourite episode of the whole series, that last one, about how we made it. So people really really like that sort of thing and, I'm not 100% sure why, but they do, they're very popular.*

[48:23] **EL:** In a typical day, if there is such a thing, of filming for a natural history documentary, would someone on the crew be responsible for filming behind-the-scenes footage, or does it,

JT: Yes.

EL: -happen randomly?

JT: Nowadays when we go into making any natural history series, we know that we will be making a behind-the-scenes component to the series, so, we tend to film most of the things that we do. I mean, *we try to focus it on very specific, we don't obviously film everything, because some of it isn't very interesting, so we tend to look at the most dramatic or the hardest or toughest things we do, the things we know are going to provide some great moments for the audience, for appreciating the sort of stuff that we do.* We make sure that we are always filming those things. But yes, someone on the crew is filming that as we go along.

²¹⁹ Transcripts have been lightly edited to remove filler words and false starts. Emphasis added.

For Turner, the value of MODs lies in giving the audience a chance to appreciate “what the filmmakers go through in order to capture these sort of real and true moments” in terms of the physical and logistical challenges of their work on location. This is in line with the amateur natural history practiced by “telenaturalists” of the pre-professional era of wildlife films, emphasizing “such themes as patience, self-discipline, self-restraint, bodily suffering, communion with nature, and the ability to outwit animals” (Gouyon 2016, 97; see also Gouyon 2011a). Turner also describes how the popularity of MODs is such that filming behind-the-scenes material has become a regular component of their production practices, with the aim of capturing “the most dramatic or the hardest or toughest things we do.” As a result, many recent MODs employ elements that heighten the drama of filmmakers’ narratives, emphasizing how filmmakers overcome these challenges thanks to the exceptional qualities Gouyon listed above. This narrative tool can be used even when the challenge is not inherently dramatic, such as a filmmaker waiting for long periods for an elusive behaviour.²²⁰

In this interview excerpt, Mike Downie describes the benefits of MODs, particularly in terms of their ability to reveal the challenges of filmmaking and the common experience of needing to adapt filming to especially difficult conditions.

EL: What do you think about documentaries having accompanying behind the scenes featurettes or more information on a website that the viewer can go-

Mike Downie: Oh.

EL: -and find out more about-

MD: Yeah.

EL: -the topic?

MD: Awesome. I’ve done those on a few of the documentaries, seems like we were doing more a few years ago than now, I dunno if there was more money then, but we’d just do it ourselves, but *I always loved pulling back the curtain a little bit and, always about how things turn around, in other words, this was supposed to be such a problem, this was not what we came for.*

EL: Mm hmm.

MD: -oh wait a minute, and then finding, *spinning gold from straw* and when I say that I just mean taking away your, cause I’ve done this a couple of times, here’s our mistake and this is what it turned into, And of course if you’re in the moment, and if you’re not, you do all this work and you have your shooting script for the day, and if you keep referring to that shooting script all day, you’re not going to have a great day. What you do is that gives you your itinerary for the day, you move off that and the reason you do is that there’s probably something better there, and often it is the things that at first you think is a problem.

²²⁰ Such as Paul Stewart waiting for the bird-of-paradise display in the *Planet Earth Diaries* MOD for the “Jungles” episode of *Planet Earth* described earlier in this chapter.

And then often, almost, not always, but can often turn out to be, “wait a minute, this is really good way to get this across. This is a really good way.”

For Downie, MODs offer audiences perspective on the challenges of filmmaking where the unreliability of animal subjects mean that filmmakers must be flexible and ready to take advantage of opportunities as they arise, rather than following a pre-ordained filming schedule. As I will discuss in the next section, this aspect of behind-the-scenes filming is especially relevant to the MOD for *Chimpanzee*: filmmakers focus on the setback of the death of Oscar’s mother and his unexpected adoption by Freddy, which became the main emotional arc of the film.

Audiences’ potential interest in how filmmakers overcome these challenges is such that geologist and documentarian Nick Eyles describes how not producing a “making of” episode for the series *Geologic Journeys* was “sort of a missed opportunity”:

Nick Eyles: there’s physical challenges, you’ve got to get to where you’re going, I mean, some of the places we went to particularly Ethiopia and the Himalayas were pretty physically demanding, very demanding and I would say *we could have done another episode on the “making of”* [laughs] *the series, anyways that was sort of a missed opportunity I think. Just how do you get to these places, what are the challenges, you see a nice product on the screen but it’s a hell of a lot of work, behind it.*

For Eyles, an MOD showing the logistical and physical difficulties involved in reaching and operating in their film locations would have been of interest to audiences who otherwise only witness “a nice product on the screen” without appreciating the underlying effort the rigours of reaching inaccessible film locations. Eyles’ intuition mirrors Turner’s assessment that seeing “what the filmmakers go through” increases audience appreciation for the final film. For example, recent wildlife MODs commonly include scenes of vehicles stuck on muddy roads or traversing unsafe bridges. These shots serve the dual purposes of highlighting the inaccessibility and remoteness of film locations, as well as the physical challenges facing the film crew, whose perseverance is rewarded within the MOD through their eventual success at achieving the footage they need.

One filmmaker described MODs’ ability to showcase a film production’s use of unfamiliar or novel technologies. Kenton Vaughan mentioned that *The Nature of Things* included an explanation of their use of “trail cam” footage, and that behind-the-scenes material is a good response to audience interest in the production details of the film.

Kenton Vaughan: I think it [MOD]’s a good thing. Yeah. [Laughs] Besides, if there’s an appetite for that and the ability to do that, I would say it’s a good thing. We did a little thing on *The Nature of Things*, *we used photos from a trail camera and on the website we sort*

of described how that worked and all that kinda stuff. So I think it's a good thing [...] I mean, when I've presented my ferret film everyone asks "How did you get those shots? How did you do all that?" and I have no probl-, it's great, I love telling people how we treated the footage and all that kinda stuff.

For Vaughan, MODs are a helpful opportunity to elaborate for audiences the technical context of wildlife film production. He refers to the example of the trail camera photos that were included in his film about black-footed ferrets *Return of the Prairie Bandit* (2011); *The Nature of Things* included behind-the-scenes material describing the technology on their website because viewers would not necessarily have been familiar with this technology. Vaughan's explanation echoes Scott's (2003) description of the work of the BBC Natural History Unit in gradually acclimatizing viewers to novel technologies such as time-lapse and microphotography. In addition, many current MODs feature innovations in film technology as part of their role in showing how spectacular footage was made possible. The camera innovations and filmmaking techniques described within the MODs of the blue-chip renaissance serve the genre's aims; they help to acclimatize viewers to new incarnations of the camera as an objective lens for viewing nature.²²¹

Taken together, these filmmakers' perspectives reinforce MOD's contribution to an emphasis on filmmakers' telenaturalist values described by Gouyon (2011a; 2016). These filmmakers are focused on how MODs offer their audiences a behind-the-scenes look at their work on location and its many challenges, and in their estimation increasing viewers' appreciation of the hardships they face. Filmmakers also understood MODs in terms of their potential to offer a dramatic narrative of overcoming physical challenges or logistical setbacks, or in Downie's words, how they manage "spinning gold from straw." Behind-the-scenes material can also help to explain new technologies to viewers, as in Vaughan's reference to *The Nature of Things* describing the specific camera technology of the trail cam. In the next section, I describe how these elements are employed in the case of *Chimpanzee*'s making-of trailer. By showcasing the on-location physical hardships undergone by the crew, their professionalism and expertise about wild animal behaviour, their novel technological solutions to filming in the jungle, as well as the production's ability to adapt to events that drastically impacted the planned storyline, the MOD contributes to a portrait of filmmaker exceptionalism that reinforces *Chimpanzee*'s authenticity.

²²¹ As I discussed in Chapter 2, *Planet Earth*'s high-definition cameras and the heligimbal camera mount feature prominently in the series marketing and behind-the-scenes material.

The Making of *Chimpanzee*

The promotional trailer “The Making of *Chimpanzee*,” which preceded the release of DisneyNature’s 2012 wildlife film, combines a series of elements to portray filmmakers meeting the challenges of filming in a remote and difficult location in order to deliver an emotionally-satisfying film narrative. The MOD employs the language of creative exceptionalism, showcases the telenaturalist legacy of filmmakers at work, situates their expedition for chimpanzees as an animal-as-object quest, emphasizes the role of novel film technology, and draws from the reality-TV genre to heighten the dramatic impact of environmental elements. However, this making-of trailer does not showcase all of the film’s staging practices employed to construct the character of Oscar, the star of the film, from footage of multiple young chimpanzees over several years of filming. While the blue-chip renaissance gives such MODs enhanced prominence as promotional and marketing devices, their transparency is limited to supporting the authenticity of blue-chip wildlife programming and does not extend to the claimed artificiality described by Gouyon for earlier wildlife films.

“I’ve made wildlife films on almost every animal on this planet, in almost every habitat on the planet. By far the most challenging is working with chimpanzees in the rainforest” [0:07]. This quote, superimposed over stirring music and crisp wildlife footage is spoken by Alastair Fothergill, director of *Chimpanzee*, at the beginning of the film’s behind-the-scenes trailer, “The Making of *Chimpanzee*.”²²² Fothergill’s opening narration sets up chimpanzees as the target of the film production expedition, in line with Chris’ (2006) characterization of the animal-as-object in travelogue wildlife films. The trailer, lasting 4 minutes, 20 seconds, was shown in theatres prior to *Chimpanzee*’s release, and is available on DisneyNature’s website, as well as on YouTube where it has received over 81 thousand views across at least four different channels.²²³ It is also included in *Chimpanzee*’s DVD and Blu-Ray releases as a special feature titled “On Location: The Making Of *Chimpanzee*.”²²⁴

²²² Including a lion roaring at a crocodile, hippos in the water, an elephant, aerial footage of migrating wildebeest, and chimpanzees in the forest.

²²³ Including 57079 views for “Chimpanzee ‘Making Of’ Featurrette” (Disney Movie Trailers 2012), 13324 views of “Chimpanzee - Behind the Scenes (2012)” (Movieclips Coming Soon), 7647 views of “The Making of ‘Chimpanzee’ - DisneyNature” (Mouse Castle Trailers 2012), and 3216 views of “The Making Of: Chimpanzee (2012) HD *Exclusive*” (HD Movie Trailers 2012), as of September 16th, 2017.

²²⁴ The DVD - Blu-Ray set advertises this special feature with the description: “Experience The Daunting Obstacles Filmmakers Encountered On Their Three-Year Quest To Capture This Extraordinary Story.”

In the trailer, viewers can witness the challenges involved in making the film, including the remoteness of the rainforest location of the Ivory Coast's Tai National Park, a UNESCO World Heritage Site. The filmmakers are plagued by muddy roads, narrow paths through dense vegetation, and a base camp that attracts unwanted visitors: scorpions, army ants, and pythons. Showcasing the remoteness of their film location contributes to this MOD's performativity as an expeditionary "journey film" (Bruzzi 2000). *Chimpanzee*'s directors Fothergill and Mark Linfield, field producer James Reed, and principal photographers Martyn Colbeck and Bill Wallauer (who also acted as a scientific consultant) appear in the trailer as talking heads, describing the difficult filmmaking conditions in the Ivory Coast and the hardiness of the crew while facing these challenging conditions: "On most days," said Fothergill, "the cameramen will get *seconds* of footage" [3:37; emphasis in original]. Those talking-head images of the filmmakers are in sharp contrast to their behind-the-scenes appearances in the rainforest, where they are muddy, sweaty, knee-deep in water, or surrounded by dangerous, charging chimpanzees. In a particularly intense shot, the filmmakers are beset by a swarm of bees, who crawl on Reed and two unnamed crew members' clothing and faces (see *Figure 5*).²²⁵ Borrowing from the tropes of reality TV, the drama of this episode is heightened through the use of intensified music and buzzing, and close-up camera shots of their frustrated faces. The filmmakers attempt to swat them away, until Reed makes the decision to end filming. "It's got intolerable," he explains, "I'ma leave it. We're out of here. Had enough" [1:47]. Despite these setbacks, the trailer portrays the filmmakers to be enjoying themselves. "There must be easier ways to make a living" asserts Colbeck, walking through a stream, "but they're not as much fun" [2:20]. Throughout the behind-the-scenes footage, the on-location filmmakers demonstrate their capability through telenaturalist values of patience, hardiness, skill locating animals, and, most strikingly, the "bodily suffering" endured by the film crew under challenging jungle conditions (Gouyon 2016; 97).

The trailer acts to showcase the filmmakers on location and to explicitly emphasize their professionalism, positioning them as unique in possessing the skills required for the challenging production. Fothergill praises the astonishing abilities of the film's principal photographers, employing the language of creative exceptionalism (Sullivan 2008). He explains the importance

²²⁵ In the 2012 environmental filmmaking public lecture series where I first encountered the filmmakers who became my interview subjects, Kenton Vaughan singled out bees as an especially-challenging feature of filming in the jungle. While describing bees that were attracted to human sweat, he claimed "It's a good thing that it's not easy to make documentaries, otherwise more people would want to do it."



Figure 5: Screenshot from “Chimpanzee ‘Making of’ Featurette” video: behind-the-scenes footage. © Disneynature. This screenshot shows an unnamed cameraman from *Chimpanzee* on location and the swarm of bees that delayed filming. It is an example of the behind-the-scenes type of footage in the MOD trailer. (Disney Movie Trailers 2012) of having an exceptional film crew: “The most important thing we did was to choose the best wildlife cameraman in the world. Martyn Colbeck is absolutely the top of his game. The quality of images that he got out of that forest are frankly startling” [1:58]. Also key to the project’s success was hiring a scientific consultant who would be able to obtain excellent footage of chimpanzees. Fothergill explains that “Bill Wallauer’s very fast in the forest, and he understands chimpanzees” [2:24]. Chimpanzees as film subject present their own particular difficulties: Wallauer explains that “The biggest challenge in capturing chimps is to move faster than the chimps, predict where they’re going to come through, and to keep a safe distance. They’re in a life-and-death situation” [2:28]. Fothergill clarifies “That’s very important for the action sequences of the film” [2:37]. Colbeck’s voiceover, above footage of loud and fast-moving chimpanzees, adds “It’s pandemonium, those inter-group encounters. Really quite frightening, because you’ve got these enormous animals, running all around you, screaming. You don’t know what’s going on” [2:41]. By emphasizing Wallauer’s speed and his understanding of chimpanzee behaviour, the MOD positions Wallauer’s unique combination of expertise with the film’s species of interest and his skill as a cameraman as essential for obtaining the type and quality of footage the film required.

The trailer also emphasizes a new technological solution to the challenge of filming rainforest vegetation from within and above: a moving camera on a cable-pulley apparatus fixed high in the treetops. Colbeck explains in a voice-over how the rainforest environment makes filming chimpanzees difficult: “This was the most challenging project I’ve ever done. The canopy is very enclosed, vegetation is very thick at ground level. I was always trying to find this little tiny window through the vegetation” [2:09]. Later in the trailer, narrating over crisp, HD-quality footage of waterfalls, the forest canopy, and individual raindrops bending and bouncing off a leaf, Fothergill explains that “We were very keen to make sure the beauty of the rainforest was brought to the big screen” [3:18]. Reed elaborates how “In order to bring the trees to life, you need to sort of fly the camera through the forest” [3:23]. Over footage of the moving camera in action, Fothergill describes the technical set-up: “We’d put cables in the canopy of the rainforest, and ran specially-designed cameras to contract through the rainforest and it’s a beautifully smooth shot” [3:27]. The scene culminates with 3 seconds of footage of the rainforest canopy from the cable-mounted camera. Such showcasing of the film crew’s ingenious invention of the pulley apparatus is not unusual in the MODs of the blue-chip renaissance. The contraption allows for previously-impossible spectacular footage of nature that diminishes the traces of filmmakers. For example, it allows footage of jungle vegetation that is not impacted by wind from a helicopter’s rotors.²²⁶

Three types of footage, which occur within virtually all making-of documentaries (Sullivan 2008, 71), are included in this MOD to fulfill the trailer’s purpose of showing how *Chimpanzee* was made and to support the film’s authenticity. The first is that of talking-head interviews, where the filmmakers speak into the camera in front of a rainforest backdrop. Their first appearance includes a caption of their name and production title (see *Figure 6*). As talking heads, the filmmakers promote each other’s particular and exceptional skillsets; the MOD positions them as having the right characteristics to find and film their subject matter. The second is the behind-the-scenes footage, which is of lower visual quality and shows the filmmakers at work or travelling, their camp, their equipment, or the rainforest setting. Through its use of observational realism techniques, including the close following of action as it unfolds and the unobtrusive filming of the *Chimpanzee* crew, this type of footage offers contextual evidence of the filmmakers on location, and more specifically authenticates the resulting wildlife footage because filmmakers and

²²⁶ See Chapter 2 for a discussion of the promotion of mediation-diminishing technologies in the *Planet Earth* series.

chimpanzees are shown together in the same shot (Richards 2014).²²⁷ The behind-the-scenes footage also serves as a performance of their hardiness and durability within an expeditionary “journey film.” It emphasizes the challenging conditions that impede their quest for footage of chimpanzees, the object of their filmmaking journey (Chris 2006). The challenges shown in the MOD render the filmmakers’ success more satisfying to viewers. Finally, the making-of trailer includes clips of high-definition (HD) footage from the *Chimpanzee* film: terrain, vegetation, or animals. The latter is of higher quality than the behind-the-scenes footage, does not include any filmmakers, equipment, or signs of civilization. This footage demonstrates the filmmakers’ success on location at obtaining the shots needed for the film. As a result, these observations of nature “combin[e] performance and product” (Secord 2011, 440).



Figure 6: Screenshot from “Chimpanzee ‘Making of’ Featurette” video: talking-head footage. © Disneynature. This screenshot shows *Chimpanzee* director Alastair Fothergill describing how, of all his wildlife film experiences in different habitats, chimpanzees were the most challenging. This is an example of the talking-head type of footage in an MOD. This is Fothergill’s first appearance in the featurette; his name and title are included on screen. (Disney Movie Trailers 2012)

The three types of MOD footage in the *Chimpanzee* trailer work together to support the authenticity of the finished footage as well as reveal the labour and skill present in the human narratives but purified from the final blue-chip product. For example, in the segment explaining the canopy-cable apparatus, Fothergill and Reed each appear as talking heads describing the need

²²⁷ Richards describes the inclusion of both a filmmaker and the wild animal(s) of interest within the same frame as a “two shot”: “a device long used as a means of authenticating wildlife footage” (2014, 8).

to showcase the beauty of the rainforest and how the apparatus was built. Those descriptions are interspaced with behind-the-scenes footage of filmmakers and equipment on location as the camera moves on the cables (from below as it climbs the cable, moving on a lower-strung cable about 6 feet above ground level, and moving horizontally on the cable at treetop height, filmed from the side). Finally, the HD-quality footage filmed using the cable-canopy apparatus at the end of the segment demonstrates the successful visual results of the apparatus’ “specially designed cameras”:²²⁸ a smooth, unbroken shot of the forest canopy from above (see *Figure 7*).²²⁸ Knowing more about the canopy-cable apparatus, including the location-specific challenge it was designed to solve, offers viewers a chance to appreciate the filmmakers’ ingenuity as well as the apparatus’ key role in the novel visual language of the finished film.



Figure 7: Screenshot from “Chimpanzee ‘Making of’ Featurette” video: film footage. © Disneynature. This screenshot shows footage from the *Chimpanzee* film obtained from the canopy camera apparatus. It is shown in the MOD trailer following the discussion of the apparatus, as a demonstration of the kind of footage made possible by the camera innovation. This was filmed in HD; it looks “crisper” than the 2 preceding screenshots. (Disney Movie Trailers 2012)

²²⁸ This type of shot is visually distinct from either the HD-heligmibal setup of aerial helicopter footage from *Planet Earth* or the smooth vertical climbs of the cinebulle camera technology from the 1990s, as the camera is moving within the forest canopy, not above it (For further discussion of these visualization technologies, see Chapter 2).

The making-of trailer also includes references to the main narrative event of the film, the adoption of baby chimp Oscar by Freddy, the alpha male of the group.²²⁹ The filmmakers' description of this never-before-filmed event is framed to reinforce *Chimpanzee's* authenticity, emphasizing that both the tragic death of Oscar's mother Isha and the adoption were unexpectedly witnessed on location. Linfield alludes to the violent inter-group encounter that leads to Isha's death by saying "At one point something terrible happens to this little boy's mother" [2:51]. Jane Goodall, associated with the production as its "chimpanzee conservation ambassador" and who appears in the trailer as a talking-head participant, explains "Oscar completely on his own in the forest wouldn't have survived" [2:57].²³⁰ Isha's death had potentially dire consequences for the production of *Chimpanzee*, which had until that point been focussed on Oscar growing up in the rainforest. Fothergill explains the event from a producer's perspective: "You know, when that happened, we thought the film was over. We were about to ring up Disney and say 'Guys, we haven't got a movie.' And then the most unpredictable thing happened: the adoption of our star by Freddy, the alpha male. Never filmed before in the wild" [3:00].²³¹ This voiceover is combined with footage of Reed (on location) with his forehead in his hands in disbelief, and then of Oscar climbing onto Freddy's back [3:08]. The family-friendly story of Oscar's adoption cements *Chimpanzee* within the emotionally-satisfying Disney canon.²³² The production team understands their audience's potential emotional resonance with the chimpanzees on film: "You just live for those golden moments, every now and again where it all comes together" explains Reed, over footage of a chimpanzee's face bathed in sunlight, with a butterfly floating overhead.²³³ "You know, I think it's gonna touch people the way it touched us when we were there filming it" [3:41].

²²⁹ Richards (2014) discusses the naming conventions within wildlife filmmaking, wherein one animal character is often edited together from footage of multiple, interchangeable animals. She considers the BBC series *Big Cat Diary* (1996-2008) to be notable for its commitment to the consistent representation of individual animals named in the production. She interprets this as having been an ethical choice on behalf of the production team due to its eschewing of potential misrepresentation. Bousé's (1998; 2000) criticism of the creation of these composite animal characters motivates his skepticism that wildlife films belong within the genre of documentary.

²³⁰ Her credited title in this MOD is "UN Messenger of Peace."

²³¹ As we have seen, emphasis on footage of behaviour that has never before been captured on film is a common marketing strategy within the blue-chip renaissance.

²³² Disney has produced and distributed many films with plots featuring unlikely adoptions and men or male animals assuming primary parenting roles, such as *Three Men and a Baby* (1987) and the animated *Brother Bear* (2003) and its 2006 sequel.

²³³ Reed's "golden moments" comment is reminiscent of the instructions to early Disney cinematographers to seek "nuggets" or sequences of behaviour revealing a wild animal's personality within a larger narrative; Walt Disney considered animal behaviour to show the "instinctive beginnings of the deepest, most basic human emotions," and therefore a film's capacity to engender those emotions allowed the audience to both connect and identify with the

The making-of trailer emphasizes the filmmaker's account of having gone to a remote location and found a remarkable story of authentic, never-before-filmed chimpanzee behaviour. But *Chimpanzee* received criticism when film producers revealed that multiple young chimpanzees had portrayed Oscar over the 4-year film shoot. The charisma of the Oscar character and the unlikely adoption narrative featured prominently in the film's marketing, including a social media campaign with the label "#MeetOscar."²³⁴ Responding to the controversy, Fothergill explained "What is important to us is [...] that it is scientifically accurate. There's nothing contrived or artificial [...] We constructed it to a certain extent. But it's not a fake. It is a true story" (von Leszczynski 2013), echoing similar justifications by wildlife filmmakers embroiled in media attention over staging practices. The MOD trailer reinforces the film's authenticity by emphasizing the filmmakers on location, the difficult conditions under which they lived and worked, and the challenges posed by filming wild chimpanzees. But the construction of the composite Oscar character does not feature within the MOD, as it would undermine the portrayal of filmmakers on location being fortunate enough to discover such an emotionally-satisfying and true adoption story in the wild. As a result, the stance of claimed artificiality evident in the MOD for *Winged Migration*, owning up to the production's imprinting of bird subjects, is not present in the *Chimpanzee* MOD despite composite animal characters being a common practice in the history of wildlife filmmaking (Bousé 1998; 2000; Richards 2014). The difference between the films' approach to such disclosure may be because, as opposed to birds imprinting to the filmmakers in *Winged Migration*, which contributed to the film's knowledge-production activities (Gouyon 2016), the use of composite characters is instead the result of *Chimpanzee*'s requirement for an emotionally-compelling narrative and of the multi-year filming schedule. In addition, transparency surrounding the production's composite-character practices would risk undermining the message that the adoption of an orphaned chimpanzee was a "true story," which featured so prominently in the film's publicity campaign.

Overall, the *Chimpanzee* MOD serves as a window into the film's context of production in service to its authenticity. It emphasizes the filmmakers' struggles on location: their rugged

animals presented (Mitman 2009, 119-20). They were presumably called "nuggets" in that such sequences helped Disney "strike gold."

²³⁴ The MOD trailer directs viewers to #MeetOscar on DisneyNature's Facebook and Twitter accounts. The trailer's unnamed narrator encourages viewers to participate in discussions about the film on social media: "Everyone is talking about Oscar. Join the conversation."

capability, patience, and hardiness in the face of environmental challenges. These are the qualities prized by early telenaturalists (Gouyon 2011a) and this trailer showcases the specific bodily challenges of on-location filmmaking. It promotes the production's ingenious use of the treetop canopy camera rig, which is a similar narrative of technological innovation leading to improved visuals of nature described in the promotion of *Planet Earth*'s heligimbal camera mount.²³⁵ The MOD showcases the filmmakers' (and in particular, cameraman and scientific consultant Bill Wallauer's) skill and patience at locating and filming chimpanzees for painstaking seconds at a time; their exceptional professionalism is framed as necessary to obtain footage that would otherwise be impossible. This professionalism, combined with the MOD's focus on the filmmakers' unexpected discovery of Oscar's heartwarming adoption story, work to cement the filmmakers as having "the authority to speak for nature" (Gouyon 2011a, 26). Such authority is especially important within the blue-chip renaissance's context of media discussions surrounding the acceptability of staging practices, as well as the damage control by *Chimpanzee* producers following the revelation that more than one chimpanzee played Oscar (von Leszczynski 2013).

Conclusion

While MODs in general present an exuberant appreciation of a film and its creative workers, within wildlife films of the blue-chip renaissance this enthusiasm is focused on filmmakers' adherence to the qualities of hardiness, patience, and knowledge about wildlife location and behaviour. MODs, in juxtaposing footage of filmmakers at work attempting to capture particular animal footage with that same animal footage, enlist viewers as witnesses not only to the authenticity of that animal behaviour, but also to the context of its production. As a result, and within a broadcast climate occasionally containing well-publicized substantiated allegations of the staging of wildlife footage, MODs shore up the authenticity of their films and programs by providing some of the contextual evidence that the footage of wildlife itself cannot, through the use of observational realism, as well as by foregrounding filmmakers' exceptional skills. Current MODs' focus on the rigours and challenges of wildlife film production are a return to the telenaturalist rhetorics of amateur natural historians. My analysis in this chapter of the character of blue-chip wildlife MODs extends Gouyon's (2016) historical treatment of the trajectory of

²³⁵ See Chapter 2 for an extended discussion of the heligimbal mount used in *Planet Earth*.

MODS that illustrate filmmakers' mastery of nature and license to offer scientific knowledge. Wildlife filmmakers operating in the blue-chip renaissance are profiled in MODs that act as contextual evidence of the authenticity of their footage. Filmmakers' performance of that authenticity is a transparency-enhancing feature of the blue-chip renaissance's return to non-interventionist on-location filmmaking.

Thanks to the purification of human on-air presenters from the main narratives of wildlife films in the blue-chip genre, the charismatic human stars of wildlife films have been supplanted by the challenging-to-locate and "never before filmed" animals highly publicized within the promotional and marketing strategies of the blue-chip renaissance. These animals inhabit the role as the "object of human action" (Chris 2006, x) from the earliest expeditionary wildlife films; their eventual capture on film is the end goal of contemporary "journey film" MODs which operate to authenticate this footage. Within the blue-chip renaissance, the adopted orphan chimpanzee Oscar shares with *Planet Earth*'s dancing bird of paradise and *Planet Earth II*'s heroic hatchling iguana the status of a rare target of cinematic capture. The "never before filmed" status is emphasized within MODs that promote filmmaker exceptionalism in service to the authenticity and value of contemporary blue-chip documentaries.

Conclusion

As this dissertation was being completed, a new round of wildlife films from DisneyNature and the BBC's Natural History Unit have appeared, offering viewers brand-new spectacle and seemingly-direct access to the natural world. The films include DisneyNature's *Born in China* (2017) and its digitally-released making-of documentary *Ghost of the Mountains* (2017). The latter film showcases the efforts of *Born in China's* production team, "the first international film crew to document this region," in their quest to obtain footage of a snow leopard family (Reif 2017). In addition, the BBC NHU series *Planet Earth II* (2017) and *Blue Planet II* (2018) explicitly draw on their namesakes' reputations of having transformed blue-chip wildlife filmmaking. These series, while offering stunning and previously-unseen animal behaviour, as well as access to novel film locations, refer in their titles and marketing materials to their progenitor series of the blue-chip renaissance. Although high-definition has been usurped by 4K and ultra-HD at the cutting-edge of film technology, these new series follow the same tactics of promoting unprecedented visuals as a window into nature made possible by a combination of filmmaker tenacity and technological mastery. Reviewers have made the same connection between film technologies and access to wildlife. In an article titled "Nature's ready for her close-up," a reviewer for NPR describes how "*Planet Earth* was one of the first blockbuster high-definition TV shows a decade ago. Now, it's filmed in *ultra-high-def*. Drones and light-weight steady cams bring viewers right up next to animals" (Huntsberry 2017, emphasis in original). Why should a television program from a decade ago resonate so strongly in discussions of today's cutting-edge visuals and unprecedented access to wildlife? How has the original *Planet Earth* become shorthand for showing us *nature*? This dissertation has explored those questions.

Summary of Findings

The aim of this dissertation has been to analyze the state of blue-chip wildlife filmmaking in the twenty-first century. Exploring the topic has required drawing from diverse bodies of knowledge related to documentary film, natural history, science communication, the history and philosophy of science, and science and technology studies. In turn, it gives those disciplines insights into their own domains of interest, offering the blue-chip renaissance as a relevant case study. It also has involved intersections with broader questions about human beings' place in

nature, the proper role for education, entertainment, and (in particular) spectacle in informal education, documentary filmmakers' professional identity and responsibility towards both subject matter and audiences, as well as issues of trust and authenticity for wildlife footage. I have argued that the blue-chip renaissance is a distinct iteration of wildlife film's portrayal of nature to audiences, characterized by a set of technological, viewer, broadcaster, and representational features, but most of all devoted to a rhetoric of non-interventionist, on-location filmmaking through an animal-as-object stance. These features have not only informed films' and series' marketing strategies and rhetorical techniques, but have both inspired contemporary filmmakers' professional self-fashioning and undergirded the prominence of behind-the-scenes material.

In Chapter 1, I have described how the conceptual binaries of entertainment-education, authenticity-artifice, and nature-culture offer an interdisciplinary framework in which to approach contemporary wildlife films. By characterizing the rich but limited scholarship treating wildlife films directly, as well as relevant topics from related subfields, I have shown that this study joins a vibrant domain of inquiry into the public representation of nature and offers new insights by asking different questions than those already posed, by identifying a new period of interest for wildlife filmmaking, by obtaining new empirical findings, and by connecting diverse literatures in a novel way. In short, this work enhances existing scholarship by following the consequences of treating contemporary blue-chip wildlife films in their full hybridity and by illustrating the resonances of wildlife films' return to an animal-as-object approach. My findings offer a corrective to wildlife films' scholarly neglect by their multiple relevant disciplines.

I have identified the blue-chip renaissance as a distinct period within wildlife filmmaking in Chapter 2, based on its new visual language for showcasing nature, developments in cameras and related technologies, its market and broadcaster features, and its prominent rhetoric of authenticity. I showed that the visual spectacle of the period, resulting from the above features, draws from older motivations within natural history display and as a result cannot be considered exterior to wildlife film's role as public science. As a result, the same tensions faced by natural historians and museum practitioners on the proper balance of entertainment and education are relevant today. I showed how the blue-chip renaissance involves the immersive possibilities of informal learning spaces, affective learning resulting from display, and viewers' pleasure. Griffiths' concept of the "revered gaze" is especially useful for linking immersion with viewers' wonder and curiosity about how footage was achieved; the animal-as-object approach cultivates a

revered gaze by emphasizing film productions' non-intervention and on-location filmmaking, through behind-the-scenes material that remains segregated from these films' portrayals of nature. The technological and production features responsible for spectacle in the blue-chip renaissance are harnessed to reinforce these films' animal-as-object orientation; footage of wildlife on location evidences the success of filmmakers' journeys to locate and film spectacles never before seen.

By drawing from practitioners' own experiences and attitudes, in Chapter 3 I characterized the impact of the blue-chip renaissance on wildlife filmmakers' professional self-identity. While only a few interviewees had participated in blue-chip projects, the renewed prominence of such programming informed filmmakers' assessment of their own practices and strategies. In particular, while they did not agree about which practices count as staging, their responses showed an awareness of the persona of the scientific observer as an aspirational figure or an unrealistic standard for filmmakers. Some interview participants described their adherence to observational norms, while others justified particular staging practices, recreating the public debate over staging and natural history artifice. Overall, I showed that for these filmmakers, staging is understood as a shortcut to behaviour that animal subjects will not reliably deliver. This challenge is especially relevant within the return to an animal-as-object stance; if an animal of interest cannot reliably be located in the wild, a recurring response is the undisclosed use of zoo animals or of filming in captivity. However, such practices have led to accusations of fakery in several examples from the blue-chip renaissance, as these substitutions undermine the claims to authenticity of these programs' promotional materials. Furthermore, from filmmakers' responses, staging emerged not as a practice to generate animal behaviour for its own sake, but rather for its contribution to a film's story. Thus, story does not impede the accuracy of a film, but is rather the condition through which films are made and a key attribute of filmmakers' professional self-identity.

After describing in prior chapters the importance of spectacle and story, Chapter 4 turns to the other side of the entertainment-education binary and describes blue-chip wildlife films as scientific representations of nature, unpacking the variety of overlapping standing-in relations at work in these films. I offered a taxonomy of footage that represents wildlife, including categories of display, illustration, and demonstration. These categories allow a more careful assessment of the scientific representation in place in these films, and it situates their educational mandate within a legacy of natural history's knowledge claims. Further, drawing on definitions and cases from the history and philosophy of science, I claim that these wildlife films both model and simulate a

variety of targets, including specific profilmic animal bodies, entire species, and biological categories. This modelling and simulation has slippery uses between research, teaching, and public science. By contrasting these representations with other forms of wildlife-only footage—static camera feeds and crittercams—I explored how different offerings of liveliness affect the portrayal of nature and how the blue-chip renaissance distinguishes itself as a curated, demonstrative liveliness that results from locating and filming animals. These conceptual features are the components of the blue-chip renaissance’s representation under the animal-as-object approach; alternative representations involve different concepts and an altered entanglement between viewer and animal, or in Hayles’ (1995) account, between beholder and world.

In the final chapter, I examined a prominent feature of the blue-chip renaissance: the making-of documentary. Although understudied, MODs have played a key role in the history of film to showcase particular forms of expertise. I showed through an analysis of *Chimpanzee*’s promotional making-of trailer how MODs deploy wildlife filmmakers’ scientific, production, and technological expertise to support the authenticity of the film’s footage within an animal-as-object production framework. In contrast to older wildlife MODs, which operate under a stance of claimed artificiality, the MODs of the blue-chip renaissance rely on observational realism as a bulwark against periodic accusations of artifice. These MODs enhance the perceived authenticity of their parent films’ footage. The films and programs of the blue-chip renaissance prominently portray themselves as having sent expert filmmakers around the world to obtain unstaged footage of wildlife. MODs uphold this portrayal by foregrounding expertise, describing technological solutions to filming challenges, and showing filmmakers at work under difficult conditions. MODs frame filmmakers within quests to locate their animals of interest and offer evidence of authentic wildlife filmmaking. Wildlife filmmakers traveling around the world to obtain never-before-seen footage is essential to the successful identity of blue-chip renaissance, and these MODs show and perform that authenticity.

As a result, MODs, which offer viewers an inroad into wildlife films’ context of production, have in the blue-chip renaissance come to epitomize particular tensions. MODs show us how nature has been constructed within a wildlife film, making visible the challenges and contingent decisions behind polished products of filmed wildlife. By involving footage of filmmakers working and living within areas that are elsewhere positioned as remote and pristine, they undermine the traditional nature-culture barrier that has long operated in the blue-chip genre.

But they also work to maintain this barrier, through the consistent positing of a pristine wilderness, the expeditionary narratives of Western filmmakers traveling to areas bereft of people, and the positioning of MODs as always peripheral to the main product: spectacular footage within stories of wildlife in areas undisturbed by human beings.

Exploring wildlife films as hybrid objects has involved exploring features from their roles as entertainment and education, nature and culture, and authenticity and artifice, as well as the tensions arising from those motivations. As far as possible, I have taken this complexity seriously by treating this set of elements not only as constraining forces but also as constitutive wildlife films' identity. By fleshing out how this co-constitutive identity has taken up the animal-as-object's challenge of capturing footage of never before seen wildlife and behaviour, I have uncovered new insights into how the blue-chip renaissance produces and portrays nature.

Directions for Further Research: What is the Impact of Wildlife Films?

One challenge that remains for wildlife film scholarship is to identify any *definitive* impacts of contemporary blue-chip wildlife films. As I show in the following section, a lack of clear knowledge about impacts has been a challenge for both wildlife film scholars and filmmakers themselves, despite repeated efforts to determine what those impacts are. From the wide range of potential impacts of this programming, the historians, media scholars, and filmmakers interested in these potential impacts have focused on wildlife films' contribution to three main areas: public knowledge about and expectations of wildlife, cultural approaches to the relations between humans and nature, and most of all to public attitudes about conservation. This scholarship, however, has not successfully demonstrated what those impacts are or disentangled them from other influences. I explore the difficulties in measuring these impacts using three brief cases: Jean-Michel Cousteau's film *Voyage to Kure*, credited with precipitating the establishment of the Papahānaumokuākea Marine National Monument in Northern Hawaii; the *Disneynature* suite of film-related conservation projects; and Cynthia Moses' INCEF *Gorilla* film project, produced by and for local communities in central Africa. Because this last film project was designed to measurably influence conservation attitudes, it offers an alternative, community-driven model for measuring impacts and experiences. These cases, drawn from diverse cultural settings, illustrate what Shapin calls the patchwork of embedded science in daily life (2016). I conclude that Halpern's approach to science communication as experience (2014; 2018; Halpern and Louson

2017) offer inroads to making audience's mundane experiences central to future examinations of wildlife film impacts.

Wildlife films' status as a significant source of images of wildlife has most recently been asserted by Richards, who summed up their importance as the major purveyor of footage of wild animals for public consumption:

Wildlife documentary has come to assume a key role in the public understanding of science and environmental issues, generating popular awareness and helping to shape public engagement with environmental politics and conflict. As our contact with the wild has become more remote, wildlife documentary has become the primary frame through which industrialised people view wildlife and nature. (2013b, 173)

While Richards points to enhanced public understanding, awareness, and engagement, the precise impact of wildlife films on individual and cultural attitudes about or actions regarding wildlife and the environment is unknown and has proven difficult to measure. In 2002, conservation filmmaker Palmer's organization *Filmmakers for Conservation* commissioned a study to compile extant research studies on wildlife films effect on public attitudes, to no avail:

The researchers worked hard, but they unearthed no rigorous, empirical evidence at all—just more stories. And even when the research seemed to suggest that a film had changed public attitudes or policies, I knew deep down that it was impossible to untangle all the various influences that could have contributed to those changes. (Palmer 2010, 158)

The “stories” Palmer mentions include anecdotes from filmmakers and individual viewers, which do not necessarily correspond to all viewers' experiences. According to the only major qualitative audience poll conducted in Austin's research on documentary audiences in general, viewers' response to wildlife on screen and the nature documentary genre indicated that viewers consider wildlife documentaries to be educational and have confidence in the well-known presenters of the wildlife programming they watch, but their preferences about the content of the programming vary greatly (Austin 2007). Where the impact of this programming *has* been explored, scholars and filmmakers have focused on its contribution to public knowledge about and expectations of wildlife, to the reciprocal effects of animal representations on cultural attitudes about human beings, and to public attitudes about conservation. Below, I explore each of these three themes of interest to wildlife film scholars, before introducing three brief cases of potentially discernible conservation-related impacts.

Impacts on Audience Expectations

Part of the motivation to reveal the misrepresentation of animal life in wildlife films is that it contributes to misinformation or unrealistic expectations about wild animals. Amanda Rees' study of primatological field sites lends support to a clash between public expectations of wild behaviour and the behaviours catalogued within wildlife films; according to one of Rees' chimpanzee researcher actors in East Africa, when Western tourists visit primate field sites they are often disappointed by the chimpanzees who cannot live up to their expectations borne from "documentaries of chimpanzee tool use and warfare" (Rees 2006, 328). The perennial question facing zookeepers, "why aren't the animals doing anything?" indicates at least a mismatch between the behaviour of animals in captivity and the more action-packed footage of megafauna in wildlife films. It would be difficult to disentangle to what extent public expectations are shaped by wildlife programming and not the other sources of information on wildlife, including stories and fables, encounters with captive or wild animals, and the extensive presence of animals in children's literature (Ratelle 2015). And long before wildlife films were theatrically released, disagreements about the authentic portrayal of nature focused on another medium. Facing the popularity of sentimentalized animals with individual personalities in literature reaching children, president Roosevelt argued that "[if] the child mind is fed with stories that are false to nature, the children will go to the haunts of the animal only to meet with disappointment [...] disbelief, and the death of interest" (Clark 1907, in Mitman 1999, 12).²³⁶ As Bousé has noted, the excitement and spectacle of current wildlife programming does not offer the same experience of wildlife as seeing animals in the wild or in captivity, both in terms of the ease of access to these experiences and the intensity of the animal action (2000).

Misinformation is another topic where the impact of wildlife films has been examined, generally in connection with staging practices that have historically been employed to generate desirable behaviour from animals on film. As I have previously discussed, the most notorious early example of staging animal behaviour is from *White Wilderness* (1958), a Disney "True-Life Adventure" documentary about life in the Arctic. Wildlife experts and ecologists overwhelmingly

²³⁶ Ironically, President Roosevelt inspired the teddy bear, the now-ubiquitous and sentimentalized stuffed animal. Haraway, in "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York City, 1908-1936" (1984; later included as a chapter in *Primate Visions*) discusses the two competing accounts of the teddy bear's origins: that it commemorated Roosevelt's kindness in sparing the life of a bear cub while hunting, or that it was a gift crafted by a hotel maid after Roosevelt had an unsuccessful day of hunting (1984, 58 fn 5). In this essay, Haraway describes the force of cultural narratives of sex, gender, and race within hunting, taxidermy, and natural history exhibition.

attribute the propagation and public acceptance of what is now referred to as the “lemming suicide myth” to *White Wilderness* although the film itself was not the original source of this explanation for this behaviour (Woodford 2003). If the public understanding of animal behaviour can be influenced by staged inaccurate behaviour to the extent that the so-called “lemming suicide myth” became generally accepted, it stands to reason that wildlife films’ depictions of animal behaviour do influence viewers’ perceived knowledge of nature. It would be unusual if the lemming example was the only piece of animal behaviour that was cemented in public understanding of wildlife through its portrayal in wildlife films.

More recently, the authoritativeness of the wildlife documentary form has been used to perpetuate hoaxes about mythological or nonexistent animals, with many viewers expressing confusion about or belief in these creatures. *Mermaids: The Body Found* (2012) was a fictional documentary aired on Animal Planet offering evidence of mermaids. It proved so realistic and prompted so many inquiries to the National Oceanic and Atmospheric Administration (NOAA) that the latter released a statement that “no evidence of aquatic humanoids has ever been found” (NOAA 2012). Similar faked documentaries describe dragons and megalodons (giant prehistoric sea creatures), and each achieved high ratings as well as stimulated discussion about the existence of the creatures in question, with many thousands of viewers expressing confusion on social media about whether they really existed. Although these “docufictions” have been widely criticized for not including proper disclaimers and misleading audiences, they consistently bring high ratings to their broadcasters. *Mermaids: The Body Found* and its sequel, *Mermaids: The New Evidence* (2013) were each the most-watched program in the history of Animal Planet at the time of broadcast (de Moraes 2013).

Cultural Readings of Animals

In this section I describe three authors for whom the content of wildlife films both reflects and feeds back on cultural attitudes about human beings. This line of analysis anticipates wildlife films having diffuse cultural impacts, based on audiences’ experience of and responses to their content. In other words, these authors analyze wildlife film content because they think it makes a difference for what audiences subsequently think and do. However, since this scholarship remains at the level of expectations and predictions about audience responses, it is insufficient for discerning what real impacts are.

Chris' *Watching Wildlife* (2006) examines the cultural consequences of wildlife programming, including how reactionary gender ideology is reflected in its depictions of animal mating and parenting. Her work showcases the colonial and sociobiological assumptions at work throughout the genre's history. She draws her evidence from the narratives of a range of wildlife films, as well as examples of wildlife films located within popular media, wherein they act to bolster the naturalizing of certain human characteristics. For Chris, wildlife films offer a zoomorphic lens through which we position human beings, as they offer a naturalized justification for preexisting ideological notions of human sexuality and gender norms. Not only do we anthropomorphize animals, according to Chris, but our experiences of animal images feed back on our notions of what it means to be human. Her framework offers an inroad to explore how wildlife films influence cultural attitudes.

March of the Penguins (2005) is an especially good example of the ideological interpretation of nature documentaries, a tendency which film theorist Aguayo relates to the genre's form, wherein,

[...] specifically the importation of human family systems, emotions and relationships upon the animal kingdom, encourages the audience to read these films in a manner that attributes human characteristics to natural phenomena and animals. The wildlife documentary is thus understood as providing a peephole into understanding human nature. (Aguayo 2008, 145)

Such films have a legacy of both claiming to portray nature scientifically and of forging an emotional connection between viewer and subject matter; their content is thus naturalized and made analogous to human behaviour. *March of the Penguins* shows a year in the life of a colony of Antarctic emperor penguins. Under the narration of Morgan Freeman, viewers observe the penguins, in their struggle for survival and reproduction, demonstrating human-like courtship, falling in love and remaining monogamous to their partners over a vast distance. Conservative critic and radio host Michael Medved's *New York Times* review called the film "the motion picture of the summer that most passionately affirms traditional norms like monogamy, sacrifice and child-rearing" (in Aguayo 2008, 142). Faced with these claims, scientific magazines immediately devoted editorials to "setting the biological record straight," (Aguayo 2008, 149) including a *New Scientist* article describing the unseen penguins who "singularly fail to uphold traditional family values" by changing partners every year or engaging in homosexual behaviour (Walker 2005, 17). The latter include the famous gay penguin couple from the Central Park Zoo in New York, Roy and Silo, who were described in a *New York Times* editorial entitled "Penguin Family Values"; it

emphasized how nature can be used to justify a spectrum of behaviour, from monogamy to alarming criminal practices.²³⁷

Media scholar Mills analyzed the narration from several series produced by the BBC's Natural History Unit, interested in how programs enjoying authoritative social status describe and give meaning to animal behaviour through voice-overs by the well-known presenter David Attenborough. Mills found that these wildlife documentary series consistently foreground animal behaviour in terms of human-like family structures, supported by descriptions of heteronormativity and monogamy (2013). Examples of animal behaviour that did not fit within such traditional family structures, including infidelity, polygamy, and homosexuality, were nonetheless described within family discourses, but were emphasized as exceptions and labeled "bizarre" or "astonishing" by Attenborough, reinforcing the norm of the family regardless of the proliferation of alternative sexual arrangements and social structures throughout the animal kingdom. In addition, behaviours transgressing the family norm were described with morally-judgemental language; in *The Life of Birds*, for example, male Blue Manakins who do not rear their offspring are "neglectful of their parental duties."²³⁸

Mills argues that the consistent and limited representations of animal behaviour in wildlife documentaries ignore both the ambiguity of interpretation for many examples of animal behaviour (such as "grooming" behaviour by male chimpanzees, which is equally plausibly interpreted as homosexual behaviour) and the wider range of common behaviours that do not fit within the norm of family social structures or within heteronormative monogamy. The wealth of evidence from zoology about the diversity of sexual and social behaviours throughout the animal kingdom (including Barash and Lipton 2002; Bagemihl 1999; Reichard and Boesch 2003; Møller 2003; Low 2003; and Roughgarden 2004) mean that wildlife programs are deficient in representing this

²³⁷ The editorial provided examples of socially-undesirable behaviour in humans which is prevalent elsewhere in nature:

[those] who start looking outside the human family for old-fashioned values, in fact, will need to quickly narrow their search terms. They will surely want to ignore practices observed in animals like dolphins (gang rape), chimpanzees (exhibitionism), [and] bonobo apes (group sex). (New York Times 2005, 11; qtd in Aguayo 2008, 152)

John Greyson, a Canadian queer activist filmmaker, made a short film titled *The Ballad of Roy and Silo* (2011) as a response to the penguins' politicized sexuality. He describes the film, which features nude actors wearing penguin masks, as "a satirical opera about gay marriage" (Skinner 2011).

²³⁸ Mills draws upon Foucault's *History of Sexuality* to show the link between sexual behaviour and moral judgement on behalf of the state.

full spectrum of behaviour. The proliferation of these narrow readings feed back on the construction of familial heteronormativity, as “natural” behaviours become norms for human behaviour: “because wildlife documentaries foreground mating, giving birth and rearing as their primary narrative interest, they place issues of the family at the core of what constitutes animal behaviour and therefore at the core of what it is to be ‘natural’” (Mills 2013, 108). Mills posits that wildlife documentaries could do much good by illustrating alternatives to the “Noah’s Ark view” of nature (Bagemihl 1999) in terms of sexual and social arrangements.²³⁹ Such programs would emphasize that

[...] not only is there no such thing as a ‘norm’, but also that many species are willing to change the ways in which they organise their daily lives in response to factors such as mating competition, food scarcity and offspring availability. That is, social organisation is a response to external factors, rather than an unarguable norm around which external social factors must be organised. (Mills 2013, 111)

Such wildlife programming would counter the conventional representations of animal life that Mills believes are naturalized in wildlife films and subsequently extrapolated to human sexual arrangements and social structures; animal behaviour becomes evidence for human behaviour that is “natural.”

Unfortunately, the precise impacts of the cultural constructions of wildlife examined by Chris, Aguayo, and Mills are difficult to discern. Although Chris includes examples of wildlife films being used to naturalize human behaviour in other entertainment media texts, both her and Mills’ focusing on the content of wildlife programming means their arguments for viewers’ taking up those messages are assumptions. Without knowing more about how viewers watching those messages react, or how portrayals of animals influence real attitudes or behaviour, or the real role of wildlife films in broader cultural products, these scholars’ work ends at the borders of the films themselves and can only speculate about the impact of those messages on diverse audiences in different places. Thus, despite this scholarship’s concerns about wildlife films’ problematic portrayal of gender roles and sexual behaviour, which these authors demonstrate through extensive textual analyses, the evidence tying that portrayal to specific changes in viewers is lacking. I now focus on film-linked conservation initiatives, including three case studies of films that appear to have had more concrete effects on viewers’ attitudes and actions. While enhanced conservation (a

²³⁹ According to the Biblical story, the animals arrived in Noah’s Ark two by two, with one male and one female of each species. Multiple writers on sexual and social diversity in the animal kingdom refer to the traditional expectation of heteronormative monogamy as a “Noah’s Ark” view (see Mills 2013, 11).

catch-all label that includes real-world conservation campaigns as well as viewers' environmental attitudes and behaviours) is not the only worthwhile potential impact of wildlife films, it is the second-most-discussed potential impact in writings by wildlife film scholars and practitioners, behind the transmission of knowledge about wildlife.

On- and Off-Screen Conservation

Much of the conversation within the environmental filmmaking profession rests on the capacity of films that are not explicitly conservation-oriented to impact viewers' attitudes and actions. Can these films nonetheless “inspire” or “spark” viewers, starting them on a path towards environmentalism? On the one hand, natural history filmmakers do not necessarily see conservation as their mandate. In a conversation with Palmer, longtime *The Nature of Things* presenter and environmentalist David Suzuki said:

I know the rationale that's been used, especially by the BBC Natural History Unit, that if you get people to appreciate nature, they'll protect it. But I think that's total bullshit. When I look at the Attenborough films, I know that a lot of those animals and plants are going extinct, and yet you don't see anyone speaking out about it, and that's really shocking to me. (Palmer 2010, 159)²⁴⁰

This attitude reflects the major difference between the blue-chip genre and *The Nature of Things*' more explicit environmental messaging and investigation of scientific issues within human cultural and political contexts. Palmer found his mind changed upon viewing *Planet Earth*, the epitome of blue-chip natural history. For Palmer, the combination of technical innovation and the series' “runaway popularity” meant that viewers really could be inspired by the spectacle of the natural world (2010, 161). Palmer now sees audience attitudes to conservation existing on a continuum, and films that show spectacular views of nature do not need to explicitly have a conservation message in order to move audience members further in the direction of raised environmental consciousness. Both environmental messages and more subtle reminders of the beauty of the natural world can accomplish environmental awareness.

The environmental documentaries of the 1980s are notorious among the filmmaking community for their realistic portrayal of environmental devastation, and are referred to by insiders as “depressing” or “doom and gloom lectures” and were experienced by viewers as “taking their

²⁴⁰ David Suzuki, host of *The Nature of Things* since 1979, is a prominent Canadian public intellectual and the country's most well-known environmentalist. He was voted “most trusted Canadian” in 2009, 2010, 2011, and 2015; he placed third in both 2012 and 2013 (Braganza 2011; Miller 2015; Mackinnon 2015).

medicine” (Richards 2013b, 172; Palmer 2010). Richards (2013b) documents the rise of a more positive, “upbeat” type of environmental messaging that she refers to as “green chip” documentary: programs including the production value and spectacle of “blue chip” programs but which contain explicit conservation messaging. These include multiple series which contain an episode devoted to environmental issues, such as the final episode of *Frozen Planet* (2011) on the topic of global warming, or standalone programs like *State of the Planet* (2000), which combined familiar blue-chip imagery with footage of environmental devastation, and *Planet Earth: The Future* (2006), which was devoted to conservation and environmentalism. For Richards, these programs contrast strongly with prior environmental documentaries, and rather embody

[...] a new style of wildlife programming that focused on climate change and other complex environmental issues not as ‘doom and gloom’ scenarios, but as problems that could be solved through concerted local, national and global action. Problems, in other words, that could be recast as upbeat, feel-good solutions. (2013, 182)

Richards describes a bipartite strategy for the BBC’s natural history unit which reinforces the traditional separation of nature and culture in wildlife films. First, there is a continued focus on the production of spectacular and profitable blue-chip programming, tailored to the international broadcast market. Second, programming with a distinct environmentalist outlook piggybacks on the popularity of landmark series but remains separate enough to tackle political and conservation issues without risk of alienating viewers who want to be entertained by beautiful images (2013b, 183).

The BBC’s Natural History Unit is not the only production company making wildlife and environmental films in this “upbeat” approach. Many wildlife and environmental filmmakers have moved away from entirely pessimistic portrayals of environmental issues, and instead offer at-least-partially positive stories about conservation projects that are making a difference, or areas where local groups are finding solutions. Palmer emphasizes *The Sierra Club Chronicles’* mini-conservation projects and Animal Planet’s *A Year on Earth* encouraged by multiple films’ peripheral educational materials and longer-term conservation goals, which he uses as examples of films making a difference for conservation. And screenings of Gary Marcuse’s film *Waking the Green Tiger* (2011) about anti-dam environmental activism in China have been used to help local populations in other countries mobilize their own environmental projects.²⁴¹

²⁴¹ Gary Marcuse described the impact of these screenings during his interview.

Supporting conservation efforts is a primary goal of much environmental filmmaking, and there has been a great deal of discussion within documentary literature about the genre's potential conservation impacts. Wildlife film scholars have contrasted the pro-conservation content of contemporary environmental films with the blue-chip natural history strain of wildlife films, finding the latter to have traditionally obscured problems like pollution, climate change, and habitat devastation (Mitman 2009; Richards 2013b). Conservation filmmaker Palmer has described his initial misgivings about the potential for blue-chip nature films to impact pro-environmental viewers' attitudes or actions. He recalled discussions with fellow filmmakers on the festival circuit about the differences between films with beautiful visuals and those making a genuine difference for the environment:

Promoting the beauty of the natural world was not the same as conservation, I argued. Conservation was action with measurable results: a bill passed, money raised, activists recruited. Unless films produced immediate and visible results—such as audience members contacting a member of Congress, contributing money to a conservation group, or joining a grassroots organization—we shouldn't waste time producing them, or at least we shouldn't pretend they were anything but entertainment. In terms of conservation, we'd be better off spending that money on land acquisition, scientific research, or educational programs. (2010, 158)

Under this view, offering beautiful imagery is tantamount to encouraging viewer complacency, and risks obscuring real environmental harms with pristine wilderness. As a concrete example, Palmer refers to an anecdote by filmmaker Hardy Jones where a wealthy potential donor at a fundraiser stated “I watched *Blue Planet* last week and the oceans seem totally healthy [...] Why are we bothering to raise money?” (2010, 159) This example fulfills Palmer's fear that pristine images commit sins of omission by refusing to show the real effects of pollution and other environmental problems. Bousé has pointed out the correlation between the expansion of wildlife films and the deterioration and loss of habitats and wildlife, emphasizing that there is no strong link between wildlife film viewership and conservation in real terms (2000, xiv). Yet Palmer's pessimism about whether we can know wildlife and environmental films' impacts is unwarranted. His research team may only have been able to come up with “just more stories” (2010, 158) but some of these stories amount to concrete environmental protections and policy changes that seem attributable to the impacts of individual films that point out real problems and have led to tangible, if limited solutions. In the cases below, I explore the potential links between specific conservation-related film projects and discrete conservation impacts.

Case 1: Jean-Michel Cousteau's Voyage to Kure

A particularly striking example of a conservation event linked to a wildlife film is that of the 360 thousand square-kilometre Papahānaumokuākea Marine National Monument, established by President George W. Bush on June 15th, 2006.²⁴² The inspiration for this action is attributed to a film screening in April 2006 of the wildlife documentary *Voyage to Kure*, directed by Jean-Michel Cousteau, at the White House. The film depicts Cousteau and his team traveling to Hawaii, scuba diving, and finding trash-strewn beaches. Following the screening, then-President Bush purportedly told his staff to “get it done” and obtained national monument status for the islands (Palmer 2010, 188; PBS 2006). Although the area was being considered for marine sanctuary status (a lengthy process involving public consultations and which could have taken several more years), and certain portions have enjoyed various wildlife refuge statuses, the presidential designation immediately established more stringent environmental protections than would have been in place had the original plan for marine sanctuary designation been successful.²⁴³

Even though there was already strong public sentiment in favour of protecting the area, with the majority of the 52,000 comments “in favor of strong protection” (NOAA/USFWS/DLNR 2006, 5), the film screening was a tipping point for swift action on the part of the President, whose designation of the National Monument under the 1906 Antiquities Act superseded the preexisting campaign for marine sanctuary status for the area and led to strong, immediate protections. This designation was interpreted as “a landmark conservation event” (PBS 2006). The rapid timeline and stronger protections afforded by the National Monument status have been interpreted as benefits attributable to the fortuitous influence of a wildlife film with a strong anti-pollution message.²⁴⁴ This story of a sitting president seeing the right film at the right time and becoming convinced of the urgent need for environmental protections, however, is a simplification. It leaves out the pre-existing strong public support that suggests that the area would have eventually achieved marine sanctuary status without a presidential edict. In addition, the Bush administration’s legacy on environmental protections does not suggest that this film translated into conservation priorities in other areas, such as Arctic drilling.

²⁴² It was initially designated the Northwestern Hawaiian Islands Marine National Monument.

²⁴³ President Roosevelt first protected the Northwestern Hawaiian Islands as a bird reservation in 1909 (NOAA/USFWS/DLNR 2006, 12).

²⁴⁴ Another effective example of an environmental film making a difference for policy is the film *If Dolphins Could Talk* (1990) which is considered to have led to the cessation of dolphin-harmful tuna fishing in the U.S. (Palmer 2010).

Other films with more of an activist environmental aim have been effective at encouraging public attitude changes, without the immediacy of a presidential edict. *Blackfish* (2013) described the treatment of orcas at SeaWorld, featuring the deaths of several park trainers from overly-aggressive orcas in captivity, leading to decreased attendance at the amusement park, the loss of promotional partnerships with entertainers and corporations, and proposals for legislation regarding captive ocean mammals, including bans of captive cetaceans in California marine parks. It seems straightforward that if viewer complaints referring to the film led to changed consumer behaviour and new legislation, those impacts can be attributed to the film in question. Similarly, the film *The Cove* (2009) depicted the annual dolphin drive in Taiji, Japan and environmentalists' efforts to covertly document the hunting of wild dolphins, some of which are sold to marine parks and aquariums internationally, while many more are killed for their meat which has been traditionally consumed in the area. The film's exposure of the graphic hunting practice mobilized public outrage against the annual hunt and encouraged anti-hunting activism against the capture and slaughter of dolphins in Japan, even though no bans on the traditional fishing practice have been enacted (McCurry 2009). These two examples are very different in form or tone from the blue-chip genre, as they were deliberately designed to bring about the above impacts. Their effectiveness at modifying public opinion support Suzuki's view that explicit environmental messaging can generate real-world conservation impacts through changes in viewers' attitudes and behaviour.

Case 2: Disneynature Conservation

Film production companies themselves are sometimes involved in conservation initiatives that seem to offer quantifiable positive impacts. For example, a portion of the initial ticket sales of each Disneynature film, many of which open over the Earth Day weekend, are donated to conservation initiatives related to the film's subject. These films are marketed in a manner that emphasizes the Disney corporation's legacy of nature documentary filmmaking and conservation. The Disneynature logo is an iceberg in the recognizable shape of Cinderella's castle, a central icon of the Disney brand.

The Disney corporation describes under the banner of "Conservation Collaboration" the impressive impacts of these environmental projects:

Through donations tied to opening-week attendance for all four films, Disneynature, through the Disney Conservation Fund, has planted three million trees in Brazil's Atlantic

Forest, established 40,000 acres of marine protected area in The Bahamas, protected 65,000 acres of savanna in Kenya, protected nearly 130,000 acres of wild chimpanzee habitat, educated 60,000 school children about chimpanzee conservation and cared for chimpanzees. (Disney 2015a)²⁴⁵

More recent releases, *Bears* (2014) and *Monkey Kingdom* (2015), contributed portions of their proceeds to the National Parks Foundation and Conservation International, respectively (Semigran 2014; Kawakami 2015), and these projects feature prominently in the marketing and promotion of these films' release through the Disney Conservation Fund (Disney 2015b).²⁴⁶

In addition to the tangible conservation benefits resulting from these environmental-corporate partnerships, insiders express their belief that Disneynature's films educate and inspire audiences on the topic of wildlife. Noted primatologist Jane Goodall, speaking as a "Disneynature ambassador" in promoting *Monkey Island*, listed this impact as on par with the conservation projects supported by the films:

I think that people coming away from these movies have a very different feeling. Unless they were scientists before, they will think differently about the animals or learn more about them. Hopefully children will become fascinated and want to learn more and get out into that sort of world. (Kawakami 2015)

Fascinating children, inspiring viewers: these commonly-stated goals of filmmakers are in line with Palmer's description of conservation attitudes as a spectrum. Within Palmer's model, non-explicitly environmental films about wildlife can still lead to conservation benefits by opening the possibility of environmental awareness in viewers who did not previously have such tendencies. Such environmental benefits are in addition to the more tangible conservation projects that Disneynature supports with donations of ticket sales.

Although ticket sales are easily quantified, it is debatable whether they are an appropriate or sufficient metric for assessing the impact of Disneynature's conservation efforts. While adjudicating the sincerity or effectiveness of Disneynature's conservation causes is beyond the scope of this discussion, the subsidiary's promotion of its impacts speaks to both a corporate environmentalism and a documentary broadcast landscape that each prioritize making those impacts visible and quantifiable. It is not clear whether such corporate conservation goals move beyond a superficial "greenwashing" (where corporate public relations are valued more highly

²⁴⁵ The first four Disneynature documentaries were *Earth*, *Oceans*, *African Cats*, and *Chimpanzee*.

²⁴⁶ The Disney Conservation Fund has a Google Earth App which allows users to "fly" above satellite maps of conservation projects, and is searchable by the type of animal supported, by partner environmental groups, or by year (Disney 2015b).

than environmental benefits). It is also uncertain whether a blue-chip film, despite its linked conservation campaign, can be an appropriate response to pressing environmental issues of climate change, biodiversity loss, and other features of the Anthropocene, which have inspired environmental activism. Suzuki's aforementioned criticism, that blue-chip films fail to account for the topic of extinction, is relevant here. Under Suzuki's view, the small environmental benefit engendered by a ticket-sale's worth of corporate environmentalism may not overcome what in his estimation is the greater disservice of a popular film's portrayal of a pristine wilderness.

Case 3: INCEF's Gorilla

Viewers' changed behaviour is also a potential metric of the impact of wildlife films. Consumer boycotts of environmentally-unfriendly practices have been attributed to popular environmental films (as we have seen with the previous example of tuna fisheries that harm dolphins and marine parks with captive mammals). But changes have also been deliberately measured on smaller, local scales. The International Conservation and Education Fund (INCEF) is a wildlife, public health, and development organization that focuses on strategic communication and evaluating the impacts of their local projects in the Democratic Republic of Congo and the Republic of Congo. Wildlife filmmaker Cynthia Moses, INCEF's founder and executive director, uses footage of wildlife in locally-produced films that are then disseminated to local audiences. The organization assesses the impact of its projects on attitudes and knowledge retention within those communities regarding relevant local issues including wildlife conservation (great apes, chimpanzees, and forest elephants) and bushmeat hunting prevention, as well as public health topics including HIV/AIDS, ebola, parasites, polio, maternal and child health, with extensive pre- and post-screening surveys.

Moses realized that to make a difference for conservation, wildlife films needed to be tailored to local audiences who share habitats with at-risk species. She describes how she was motivated to orient these films to local communities:

[...] I was at the Lossi Gorilla Research Sanctuary where Dr. Magdalena Bermejo and German Illera set up a television to show the members of their small village footage of the gorillas they and their trackers went into the forest to study each day. Many of the women and children had not seen gorillas before though their homes were located in the middle of the territory a group of twenty-two gorillas led by the Silver Back Apollo also called home. It soon became obvious as they familiarized themselves with the different members of Apollo's group that they felt a connection with the gorilla, which motivated them to help protect them.

On future trips, I brought tapes of not only the films I had made, but also other wildlife films. I held screenings using a solar powered television set. Attendance was always high and for one particular screening villagers walked 30 kilometers to come and watch the films. However, these films were in English or on rare occasions French and not everyone could understand them. If I expected to get conservation messages out, I wasn't going to do it by showing films that most of the audience couldn't understand. (INCEF Background)

Moses describes her previous filmmaking projects as “making films for the wrong audience [...] We were making films for people who had never been in Africa, people in the United States and Europe” (Driver). The films made for Western audiences or for global distribution neither spoke to locals nor appreciated their needs and abilities. In addition, she wanted to invite locals participate in producing these films in a meaningful way: “We needed to educate the local audience and it seemed that it might be a good idea to have them participate. It just makes sense to have Africans make films about their environment because they're the people on the ground who can handle the day-to-day conservation” (Driver).

The contrast between typical wildlife films for Western audiences and those that resonate in local contexts is emphasized by many filmmakers, including Palmer. He described how the mismatch between local audiences and blue-chip wildlife filmmaking meant the latter would have diminished effectiveness in the communities in which Moses operates:

Local buy-in is very important. A film with a message that local populations can relate to, that is told in a language they understand, and that recounts real-life stories of those who have engaged in, for example, poaching and destruction of habitats, has a very different impact than a DVD narrated in English by David Attenborough—which Africans can't afford to buy anyway. (Palmer 2010, 178)

Here, “David Attenborough” both refers to Attenborough himself and stands in for any Western omniscient narrator. INCEF emphasizes how they prefer to produce films that do not employ conventional narration, if at all; local voices involved in the story are welcome, but the audiences are meant to recognize situations and characters that are relevant to them (INCEF Production). When INCEF trained local conservation filmmakers, they even discussed the inclusion of celebrities in films, but the trainees suggested including the chiefs of local tribes, who were considered to provide better voices of authority than athletes or film stars (Driver).

Gorilla (2006) is a 7-minute INCEF film developed specifically with conservation goals in mind for local populations, not global audiences, who inhabit the same rainforests as the gorillas in the film. It is one of several films making up INCEF's Great Apes Public Awareness Project.

(GAPAP).²⁴⁷ Cameramen Anatole Mafoula and Thomas Breuer captured footage from LeFinis Gorilla Protection Project and the Mbeli Bai from Nouabale-Ndoki National Park (*Gorilla* 2006). It includes footage of solitary and pairs of gorillas eating, interacting with each other, and climbing trees; it also includes multiple close-ups of their hands, feet, and faces, especially their eyes. The video description emphasizes that the behaviours demonstrated within are those “human beings most respond to as being very much like our own.” It contains no narration, but is overlaid with driving, high-energy music featuring chanting human voices, snapping and clapping, and percussion.²⁴⁸ The film also includes sound effects, including clock chimes when a gorilla swings back and forth from a tree branch, as well as multiple instances where belches have been overlaid on the footage. The sound effects have the potentially inadvertent effect of recreating some of the trends of earlier wildlife films. It is especially reminiscent of Disney’s *True-Life Adventures*, which included music and often had sound effects accompanying footage of animal behaviour.

INCEF includes within its mandate the responsibility to evaluate its effectiveness, involving anecdotal as well as qualitative and quantitative methods. Its most important tools for self- evaluation are surveys of local audiences before and after screenings. INCEF’s educators repeatedly screen their films within an area and gather data from interviews and discussions with the viewers. In this extensive process, they take audience feedback and concerns very seriously:

The evaluation methodology involves multiple interviews and multiple screenings to determine what elements resonate most strongly, what kinds of attitudes and behaviors show signs of change, what kinds of questions or concerns remain and what are the messages that need reinforcement or even a different approach. (INCEF GAPAP)

The community educators then regroup and share their experiences, comparing the results from different communities.²⁴⁹ The evaluations are shared with INCEF’s production team, feeding back on the content of future films.

Partnering with the Arcus Foundation for support with their on-the-ground evaluation, INCEF examines whether the GAPAP films can change indigenous attitudes about primates.²⁵⁰

²⁴⁷ GAPAP’s other films include *Chimpanzees*, *Great Apes: So Like Us*, *Ebola - Testimony*, and *Ebola - Understanding*.

²⁴⁸ The music is credited to Jéhu Olivier Bikoumou, an INCEF editor. INCEF describes as one of its goals the sourcing of music as close as possible to the communities within which they operate.

²⁴⁹ The educators travel widely to share this footage: “From June of 2007 through August of 2008 – films have been disseminated to over 90,000 individuals by four educators traveling more than 2500 kilometers, mostly on foot” (INCEF GAPAP).

²⁵⁰ The Arcus foundation combines a conservation mandate with LGBTQ education and outreach.

Their preliminary results were very favourable: the film's portrayal of gorilla families strongly decreased local viewers' intended future consumption of gorilla meat. According to their 2008 Republic of Congo "Performance Report: Great Apes and Ebola" 94% of the local audience indicated that they would not eat great apes, with 54% indicating they agreed with the statement "Because they are like humans." In Palmer's assessment of the success of Moses' project, he describes some of their striking qualitative results: "One local resident said, 'If my husband brings home gorilla meat for dinner, I will refuse to cook it,' and another declared, 'If we eat great apes, we are no better than cannibals'" (Palmer 2010, 179). Film projects such as Moses' *Gorilla* are a deliberate counter to wildlife films that are globally distributed but are designed with a Western audience in mind. INCEF is proud of its strong positive results and states "The uniqueness of our work has a clearly observable and overwhelmingly favorable impact" (INCEF Evaluation).

Assessing Impacts and Science Communication

Given the above overview of the ways in which the impacts of wildlife and environmental films have been studied and measured, what then in general can we conclude about their definitive impacts? The answer, it turns out, is not very much. Without more extensive surveys of viewers, it is difficult to ascertain the degree to which knowledge about wildlife or environmental messages are retained, and whether the content of such films makes any real difference to behaviour (for example, direct action such as participating in environmental activism, or more indirect changes including altered consumer behaviour or supporting wildlife conservation efforts). While Austin's (2007) survey of British viewers suggests that they trust wildlife filmmakers, it has not been replicated by social scientists or film scholars and no major quantitative studies have examined wildlife documentary audiences. We do not know to what extent attitudes about animal or human behaviour are received by wildlife audiences, let alone their lasting effects on viewer attitudes or actions. In addition, the research and cases I explore overwhelmingly focus on educational or conservation impacts, leaving other potential areas of impact unarticulated. Artistic inspiration, for instance, is an impact of the blue-chip genre that remains unstudied among the scholars interested in wildlife films' impacts, despite the existence of examples of parody or pastiche responses to the blue-chip genre such as Greyson's *The Ballad of Roy and Silo* (2011), Goldberg's *Fuck Planet Earth* (2008), or Jimmy Kimmel's "Plizzanet Earth" (2015).

The size of audiences and the ratings for film and television wildlife documentaries offer clues about their impact: at minimum, if no one watched this programming, its impact could reasonably be assumed to be negligible. On that score, the wildlife programming of the blue-chip renaissance has fared well. *Winged Migration*, *March of the Penguins*, and *Planet Earth* attracted larger than expected audiences, so much so that it began to be considered possible to profit from audience appetite for this programming. *Planet Earth* was massively popular, with 12 million viewers in the UK alone and achieving the highest audience ratings on BBC for the year 2006 (BBC 2007). During the broadcast of *Frozen Planet*, 48% of the population of the United Kingdom tuned in for at least 15 minutes (Richards 2013b, 174), an impressive feat given the current proliferation of media options and channels. However, large audiences and high ratings do not necessarily correspond to impacts on viewers' attitudes or behaviour. It is possible that viewers are not learning anything from wildlife films. Perhaps images from wildlife programming do not resonate with local conservation issues or consumer choices, but reinforce the idea of a pristine wilderness that seems to be doing fine.

The impacts of wildlife and environmental films are differentially legible rather than generalizable set of effects that are consistent across communities. It is not the case, as Palmer (2010) contends, that there have been no measurable or reported impacts, or that such impacts are impossible to determine or to disentangle from other sources of environmental messages or animal images. However, it may be the case that no single impact can be attributed to wildlife films in general. Individual films have inspired responses from viewers and shifts in environmental and corporate policies. Certain, but not all, portrayals of animals have persisted in the public perception of wildlife. Some films have led to media and viewer discussions about staging practices or animal ethics. And INCEF's extensive pre- and post-screening surveys of their films has been used to evaluate those films' effectiveness at changing local audiences' perceptions.

Scholars attempting to tease out broader cultural impacts of wildlife films, including the acceptance of ideological messages or the naturalization of family and gender roles, have not done the requisite work of studying films within their entire production and reception contexts. Certainly, focusing on the messages contained within films' imagery and narration is useful for characterizations of what those films are saying to their publics. But without knowing how those messages are taken up by diverse audiences, broad or blanket statements about their impact are premature, and arguments depending solely on film content to show cultural influences are

insufficient. Austin (2007) showed that audiences of wildlife programming have diverse responses to different elements of films and television programs about wildlife, and the proliferation of channels, viewing platforms, and peripheral materials mean that viewers have more choice about the ways in which they consume wildlife content. As a result, analyses of the content itself cannot act as an arbiter of its impact, because we cannot assume that audiences will provide reliable or predictable responses to what they encounter on the screen.

A solution to this confusion is to follow Shapin's contention that science and technology have permeated our lived experience such that we reside within a patchwork of everyday science (2016). Science communication initiatives designed to discern those mundane experiences offer the possibility of encountering those small impacts where they happen, in moments of everyday life as this programming is consumed by viewers. Science studies scholar Halpern's model of science communication as experience is designed to investigate how small, cumulative experiences of science manifest as impacts in viewers' lived experience (see Halpern 2014; 2018; Halpern and Louson 2017). Although preliminary, this work of audience ethnography is designed to follow moments of scientific experiences from living rooms to online comment threads, varying in scope from individual viewer responses to online collaborations like the Twitter platform's massive #SharkWeek phenomenon accompanying the Discovery Channel's yearly week of shark-related programming. Halpern's work is a turning point in the field of science communication that heretofore has been content to model engagement but not the mundane ways in which viewers are exposed to small and cumulative experiences of science. These experiences do not offer access to "pure" science, but science in mixed and hybrid forms throughout many cultural products. I have shown that the wildlife films of the blue-chip renaissance are one such product, which offer a specific experience: a spectacular story of never-before-seen nature.

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Appendix A

Interview Questionnaire

Can you please state your name and your profession?

What's your background as a documentary filmmaker?

Have you had experience filming animal subjects?

How would you compare filming human and animal subjects?

What are some of the challenges of filming animal behaviour?

Are there any animal behaviours that you've had to exclude from a documentary? Do you think there are any behaviours that would always have to be excluded? Have there been any behaviours that were especially desirable?

What's your impression of the documentary landscape today?

How would you characterize a "blue chip" nature film?

Have you ever worked on a "blue chip" nature film? Was the experience different from other projects you've worked on? How did it compare to environmental filmmaking?

As a documentary filmmaker, are there any especially persistent viewer impressions you've encountered about your work?

Are there any that frustrate you or that you'd like to correct?

In general, do you think that viewers trust what they see in documentary films?

These are a few high-profile recent examples of natural history artifice in "blue chip" wildlife films, including the use of undisclosed enclosures (*Life in Cold Blood*) and tame animals (*Frozen Planet*) by the BBC Natural History Unit. What's your impression of these practices in wildlife films? What do you think of viewer criticism of these practices?

Do you see any connections or commonalities between ethnographic/anthropological filmmaking and wildlife filmmaking? Are there relevant differences?

What motivated you to participate in the Deconstructing Documentary public lecture series last fall?

What kind of audience response have your films experienced? How did this compare to the response from the public lecture series?

In your experience, are there any particular character traits that are useful for a documentary filmmaker to have?

Is there anything you'd like viewers to better understand about your line of work?